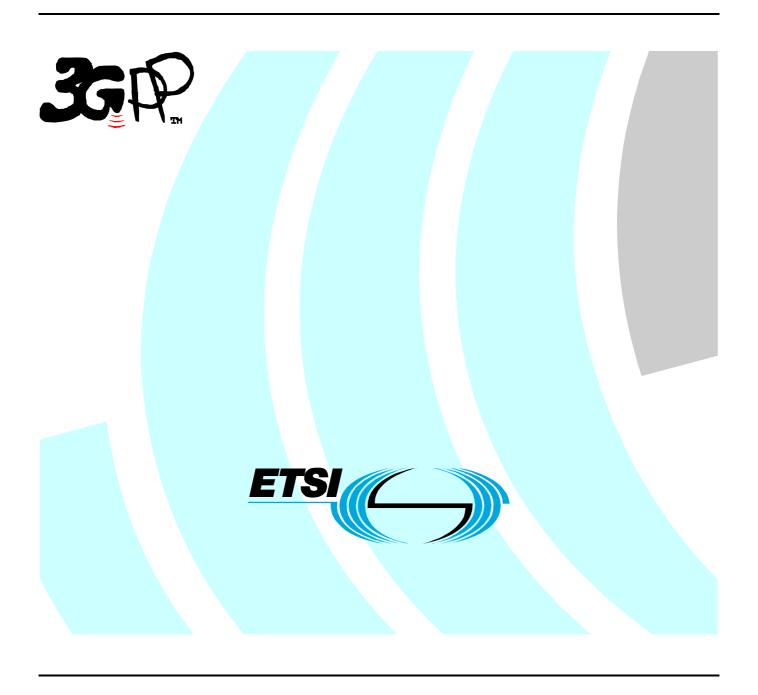
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## **Foreword**

This Technical Specification has been produced by the 3<sup>rd</sup> Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

# 1 Scope

The present document specifies the Radio Resource Control protocol for the UE-UTRAN radio interface.

The scope of the present document also includes:

- the information to be transported in a transparent container between source RNC and target RNC in connection with SRNC relocation;
- the information to be transported in a transparent container between a target RNC and another system.

## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

| [1]  | 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".   |
|------|---|
| [2]  | 3GPP TS 25.301: "Radio Interface Protocol Architecture".  |
| [3]  | 3GPP TS 25.303: "Interlayer Procedures in Connected Mode".  |
| [4]  | 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode". |
| [5]  | 3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core Network Protocols; Stage 3".    |
| [6]  | 3GPP TS 25.103: "RF parameters in support of RRM".  |
| [7]  | 3GPP TS 25.215: "Physical layer – Measurements (FDD)".  |
| [8]  | 3GPP TS 25.225: "Physical layer – Measurements (TDD)".  |
| [9]  | 3GPP TS 25.401: "UTRAN overall description".  |
| [10] | 3GPP TS 25.402: "Synchronization in UTRAN; Stage 2".  |
| [11] | 3GPP TS 23.003: "Numbering, addressing and identification".   |
| [12] | ICD-GPS-200: "Navstar GPS Space Segment/Navigation User Interface".                                 |
| [13] | RTCM-SC104: "RTCM Recommended Standards for Differential GNSS Service (v.2.2)".                     |
| [14] | 3GPP TR 25.921: "Guidelines and principles for protocol description and error handling".            |
| [15] | 3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".                               |
| [16] | 3GPP TS 25.322: "Radio Link Control (RLC) protocol specification".                                  |
| [17] | 3GPP TS 24.007: "Mobile radio interface signalling layer 3; General aspects".                       |
| [18] | 3GPP TS 25.305: "Stage 2 Functional Specification of UE Positioning in UTRAN".                      |
| [19] | 3GPP TS 25.133: "Requirements for Support of Radio Resource Management (FDD)".                      |

| [20] | 3GPP TS 25.123: "Requirements for Support of Radio Resource Management (TDD)".   |
|------|--|
| [21] | 3GPP TS 25.101: "UE Radio Transmission and Reception (FDD)".   |
| [22] | 3GPP TS 25.102: "UE Radio Transmission and Reception (TDD)".   |
| [23] | 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".   |
| [24] | 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".   |
| [25] | 3GPP TS 23.122: "Non-Access-Stratum functions related to Mobile Station (MS) in idle mode".  |
| [26] | 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".  |
| [27] | 3GPP TS 25.212: "Multiplexing and channel coding (FDD)".   |
| [28] | 3GPP TS 25.213: "Spreading and modulation (FDD)".  |
| [29] | 3GPP TS 25.214: "Physical layer procedures (FDD)".   |
| [30] | 3GPP TS 25.221: "Physical channels and mapping of transport channels onto physical channels (TDD)".  |
| [31] | 3GPP TS 25.222: "Multiplexing and channel coding (TDD)".   |
| [32] | 3GPP TS 25.223: "Spreading and modulation (TDD)".  |
| [33] | 3GPP TS 25.224: "Physical Layer Procedures (TDD)".   |
| [34] | 3GPP TS 25.302: "Services provided by the physical layer ".  |
| [35] | 3GPP TS 25.306 "UE Radio Access Capabilities".   |
| [36] | 3GPP TS 25.323: "Packet Data Convergence Protocol (PDCP) Specification".   |
| [37] | 3GPP TS 25.324: "Broadcast/Multicast Control BMC".   |
| [38] | 3GPP TR 25.922: "Radio resource management strategies".  |
| [39] | 3GPP TR 25.925: "Radio interface for broadcast/multicast services".  |
| [40] | 3GPP TS 33.102: "3G Security; Security Architecture".  |
| [41] | 3GPP TS 34.108: "Common Test Environments for User Equipment (UE) Conformance Testing".  |
| [42] | 3GPP TS 34.123-2: "User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification".                                  |
| [43] | 3GPP TS 44.018: "Mobile radio interface layer 3 specification; Radio Resource Control Protocol".   |
| [44] | 3GPP TS 44.060: "General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/Medium Access Control (RLC/MAC) protocol". |
| [45] | 3GPP TS 45.005: "Radio transmission and reception".  |
| [46] | 3GPP TS 45.008: "Radio subsystem link control".  |
| [47] | ITU-T Recommendation X.680 (07/2002) "Information Technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation".   |
| [48] | ITU-T Recommendation X.681 (07/2002) "Information Technology - Abstract Syntax Notation One (ASN.1): Information object specification".  |
| [49] | ITU-T Recommendation X.691 (07/2002) "Information technology - ASN.1 encoding rules: Specification of Packed Encoding Rules (PER)".  |
| [50] | 3GPP TS 31.102: "Characteristics of the USIM Application".   |

| [51] | 3GPP TS 25.308: "High Speed Downlink Packet Access (HSDPA): Overall Description; Stage 2".   |
|------|--|
| [52] | IANA ROHC profile identifier definition ( <a href="http://www.iana.org/assignments/rohc-pro-ids">http://www.iana.org/assignments/rohc-pro-ids</a> ). |
| [53] | 3GPP TS 44.118: "Mobile radio interface layer 3 specification; Radio Resource Control Protocol, Iu Mode".  |
| [54] | 3GPP TS 23.246: "Multimedia Broadcast Multicast Service; Architecture and Functional Description".   |
| [55] | 3GPP TS 25.346: "Introduction of the Multimedia Broadcast Multicast Service (MBMS) in the Radio Access Network (Stage-2)".                           |
| [56] | 3GPP TR 25.992: "Multimedia Broadcast Multicast Service (MBMS); UTRAN/GERAN Requirements".   |
| [57] | 3GPP TS 25.413: "UTRAN Iu Interface RANAP Signalling".   |
| [58] | 3GPP TS 25.309: "FDD Enhanced Uplink; Overall Description; Stage 2".   |
| [59] | 3GPP TS 25.319: "Enhanced Uplink; Overall Description; Stage 2".   |
| [60] | 3GPP TR 25.827: "1.28Mcps TDD Enhanced Uplink; Physical Layer Aspects".  |
| [61] | Galileo OS Signal in Space ICD (OS SIS ICD), Draft 0, Galileo Joint Undertaking, May 23 <sup>rd</sup> , 2006.  |

## 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in [1] apply, together as:

**Data Description Indicator (DDI)**: MAC-e header field used to identify the logical channel, MAC-d flow and the size of the MAC-d PDUs concatenated into a MAC-es PDU.

**E-DCH active set (FDD only):** The set of cells which carry the E-DCH for one UE. Only radio links for which an E-HICH configuration is stored are considered part of the E-DCH active set.

HARQ profile: One HARQ profile consists of a power offset attribute and maximum number of transmissions.

**MBMS** activated services: the MBMS multicast services the UE has joined as well as the broadcast services the UE is interested in.

**MCCH acquisition:** the procedure for acquiring all MCCH information relevant for the UE ie. includes reception of the RB information for the UE's MBMS activated services.

MBMS controlling cell: the cell from which the UE receives MCCH.

**MBMS notification:** a notification provided by UTRAN indicating a change in the provision of one or more MBMS services.

**MBMS Selected Services:** a subset of the MBMS activated services of the Broadcast type for which the UE applies RRC procedures to inform UTRAN that the service has been selected (by upper layers).

**MBMS transmission:** a possibly repeated session of an MBMS service. An MBMS transmission is uniquely identified by the combination of the MBMS service identity and the MBMS session identity.

**MBSFN cluster:** Set of cells operating in MBSFN mode providing only MBMS service in PtM mode and seen as one cell by a UE.

**MBSFN mode**: Transmission mode where a set of synchronized cells transmit exactly the same data for provision of MBMS service.

**Primary Absolute Grant (FDD only)**: Absolute Grant received with the primary E-RNTI.

Secondary Absolute Grant (FDD only): Absolute Grant received with the secondary E-RNTI.

**Serving E-DCH cell:** Cell from which the UE receives Absolute Grants from the Node-B scheduler. A UE has one Serving E-DCH cell.

**Serving E-DCH RLS or Serving RLS (FDD only):** Set of cells which contains at least the Serving E-DCH cell and from which the UE can receive and combine one Relative Grant. The UE has only one Serving E-DCH RLS.

**Non-serving E-DCH RL or Non-serving RL (FDD only):** Cell which belongs to the E-DCH active set but does not belong to the Serving E-DCH RLS and from which the UE can receive one Relative Grant. The UE can have zero, one or several Non-serving E-DCH RL(s).

# 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ACK Acknowledgement AG Absolute Grant

AICH Acquisition Indicator CHannel

AM Acknowledged Mode
AS Access Stratum
ASC Access Service Class
ASN.1 Abstract Syntax Notation.1
BCCH Broadcast Control Channel

BCFE Broadcast Control Functional Entity

BER Bit Error Rate
BLER BLock Error Rate
BSS Base Station Sub-system
CCCH Common Control Channel

CCPCH Common Control Physical CHannel

CH Conditional on history
CM Connection Management

CN Core Network C-RNTI Cell RNTI

CTCH Common Traffic CHannel

CTFC Calculated Transport Format Combination

CV Conditional on value

DCA Dynamic Channel Allocation
DCCH Dedicated Control Channel

DCFE Dedicated Control Functional Entity

DCH Dedicated Channel
DC-SAP Dedicated Control SAP
DDI Data Description Indicator

DGPS Differential Global Positioning System

DL Downlink

DSCH Downlink Shared Channel
DTCH Dedicated Traffic Channel
DTM Dual Transfer Mode

E-AGCH E-DCH Absolute Grant Channel

E-DCH Enhanced uplink DCH

E-DPCCH E-DCH Dedicated Physical Control Channel (FDD Only)
E-DPDCH E-DCH Dedicated Physical Data Channel (FDD Only)
E-HICH E-DCH HARQ Acknowledgement Indicator Channel
E-PUCH Enhanced Uplink Physical Channel (TDD only)
E-RGCH E-DCH Relative Grant Channel (FDD only)

E-RNTI E-DCH RNTI

E-RUCCH E-DCH Random Access Uplink Control Channel (TDD only)

E-TFCI E-DCH Transport Format Combination Indicator E-UCCH E-DCH Uplink Control Channel (TDD only)

FACH Forward Access Channel

FDD Frequency Division Duplex

F-DPCH Fractional DPCH

GANSS Galileo and Additional Navigation Satellite Systems

GC-SAP General Control SAP

GERAN GSM/EDGE Radio Access Network
GNSS Global Navigation Satellite System
GRA GERAN Registration Area

G-RNTI GERAN Radio Network Temporary Identity

HARQ Hybrid Automatic Repeat Request
HCS Hierarchical Cell Structure
HFN Hyper Frame Number
H-RNTI HS-DSCH RNTI

HS-DSCH High Speed Downlink Shared Channel

ID Identifier

IDNNS Intra Domain NAS Node Selector

IE Information element

IETF Internet Engineering Task Force
IMEI International Mobile Equipment Identity
IMSI International Mobile Subscriber Identity

IP Internet Protocol

ISCP Interference on Signal Code Power

L1 Layer 1 L2 Layer 2 L3 Layer 3

LAI Location Area Identity
MAC Media Access Control

MBMS Multimedia Broadcast Multicast Service
MBSFN MBMS over a Single Frequency Network

MCC Mobile Country Code

MCCH MBMS point-to-multipoint Control Channel

MD Mandatory default

MICH MBMS notification Indicator Channel

MM Mobility Management MNC Mobile Network Code MP Mandatory present

MTCH MBMS point-to-multipoint Traffic Channel
MSCH MBMS point-to-multipoint Scheduling Channel

NACC Network Assisted Cell Change

NAS Non Access Stratum Nt-SAP Notification SAP

NW Network OP Optional

PCCH Paging Control Channel

PCH Paging Channel
PDCP Paging Channel

PDCP Packet Data Convergence Protocol PDSCH Physical Downlink Shared Channel

PDU Protocol Data Unit

PLMN Public Land Mobile Network

PNFE Paging and Notification Control Functional Entity

PRACH Physical Random Access CHannel

PSI Packet System Information p-t-m Point-to-Multipoint

P-TMSI Packet Temporary Mobile Subscriber Identity

p-t-p Point-to-Point

PUSCH Physical Uplink Shared Channel

QoS Quality of Service
RAB Radio access bearer
RACH Random Access CHannel
RAI Routing Area Identity
RAT Radio Access Technology

RB Radio Bearer

RFE Routing Functional Entity

RG Relative Grant
RL Radio Link
RLC Radio Link Control
RLS Radio Link Set

RNC Radio Network Controller

RNTI Radio Network Temporary Identifier

RRC Radio Resource Control
RSCP Received Signal Code Power
RSN Retransmission Sequence Number
RSSI Received Signal Strength Indicator

SAP Service Access Point

SCFE Shared Control Function Entity SCTD Space Code Transmit Diversity

SCTO Soft Combining Timing Offset (MBMS)

SF Spreading Factor SG Serving grant

SHCCH Shared Control Channel
SI System Information
SIR Signal to Interference Ratio

S-RNTI SRNC - RNTI
TDD Time Division Duplex
TF Transport Format

TFCS Transport Format Combination Set

TFS Transport Format Set
TM Transparent Mode
TME Transfer Mode Entity

TMSI Temporary Mobile Subscriber Identity

Tr Transparent

TSN Transmission Sequence Number

Tx Transmission
UE User Equipment
UL Uplink

UM Unacknowledged Mode URA UTRAN Registration Area

U-RNTI UTRAN-RNTI

USCH Uplink Shared Channel

UTRAN Universal Terrestrial Radio Access Network

# 4 General

If not specified differently, descriptions are relevant for both FDD and TDD. Descriptions for TDD only are relevant for both 1.28 Mcps TDD and 3.84 Mcps TDD and 7.68 Mcps TDD if not specified differently.

# 4.1 Overview of the specification

This specification is organised as follows:

- subclause 4.2 contains the description of the model of the RRC protocol layer;
- clause 5 lists the RRC functions and the services provided to upper layers;
- clause 6 lists the services expected from the lower layers and specifies the radio bearers available for usage by the RRC messages;
- clause 7 specifies the UE states for the Access Stratum, and also specifies the processes running in the UE in the respective states;
- clause 8 specifies RRC procedures, including UE state transitions;

- clause 9 specifies the procedures for the handling of unknown, unforeseen, and erroneous protocol data by the receiving entity;
- clause 10 describes the message in a Tabular format; these messages descriptions are referenced in clause 8;
- clause 11 specifies the encoding of the messages of the RRC protocol. This is based on the Tabular description in clause 10.
- clause 12 specifies the transfer syntax for RRC PDUs derived from the encoding definition;
- clause 13 lists the protocol timers, counters, constants and variables to be used by the UE;
- clause 14 specifies some of the processes applicable in UTRA RRC connected mode e.g. measurement
  processes, and also the RRC information to be transferred between network nodes. Note that not all the processes
  applicable in UTRA RRC connected mode are specified here i.e. some UTRA RRC connected mode processes
  are described in [4] e.g. cell re-selection;
- Annex A contains recommendations about the network parameters to be stored on the USIM;
- Annex B contains informative Stage 2 description of the RRC protocol states and state transitions.

The following figure summarises the mapping of UE states, including states in GSM, to the appropriate UTRA and GSM specifications that specify the UE behaviour.

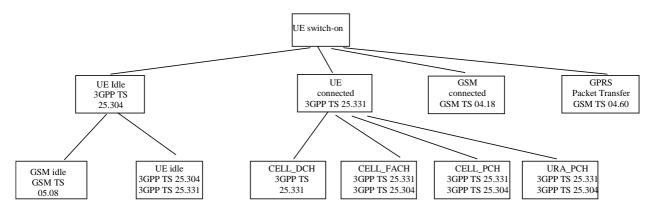


Figure 4.1-1: Mapping of UE state to 3GPP Specifications

# 4.2 RRC Layer Model

The functional entities of the RRC layer are described below:

- Routing of higher layer messages to different MM/CM entities (UE side) or different core network domains (UTRAN side) is handled by the Routing Function Entity (**RFE**).
- Broadcast functions are handled in the broadcast control function entity (**BCFE**). The BCFE is used to deliver the RRC services, which are required at the GC-SAP. The BCFE can use the lower layer services provided by the Tr-SAP and UM-SAP.
- Paging of UEs that do not have an RRC connection is controlled by the paging and notification control function entity (**PNFE**). The PNFE is used to deliver the RRC services that are required at the Nt-SAP. The PNFE can use the lower layer services provided by the Tr-SAP and UM-SAP.
- The Dedicated Control Function Entity (**DCFE**) handles all functions specific to one UE. The DCFE is used to deliver the RRC services that are required at the DC-SAP and can use lower layer services of UM/AM-SAP and Tr-SAP depending on the message to be sent and on the current UE service state.
- In TDD mode, the DCFE is assisted by the Shared Control Function Entity (SCFE) location in the C-RNC, which controls the allocation of the PDSCH and PUSCH using lower layers services of UM-SAP and Tr-SAP.
- The Transfer Mode Entity (TME) handles the mapping between the different entities inside the RRC layer and the SAPs provided by RLC.

NOTE 1: Logical information exchange is necessary also between the RRC sublayer functional entities. Most of that is implementation dependent and not necessary to present in detail in a specification.

Figure 4.2-1 shows the RRC model for the UE and Figure 4.2-2 and Figure 4.2-3 show the RRC model for the UTRAN.

NOTE 2: The figure shows only the types of SAPs that are used. Multiple instances of Tr-SAP, UM-SAP and AM-SAP are possible. Especially, different functional entities usually use different instances of SAP types.

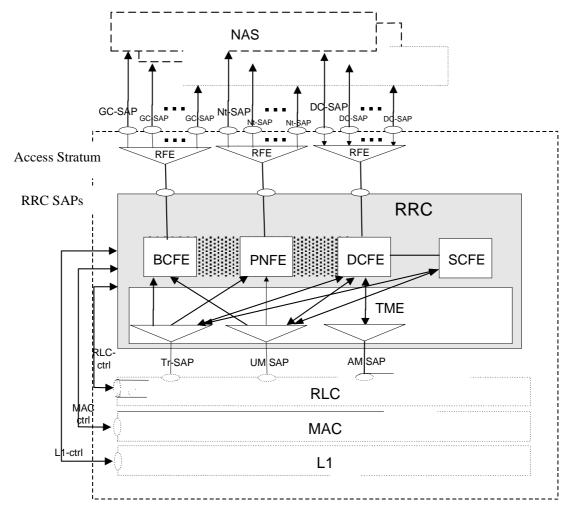


Figure 4.2-1: UE side model of RRC

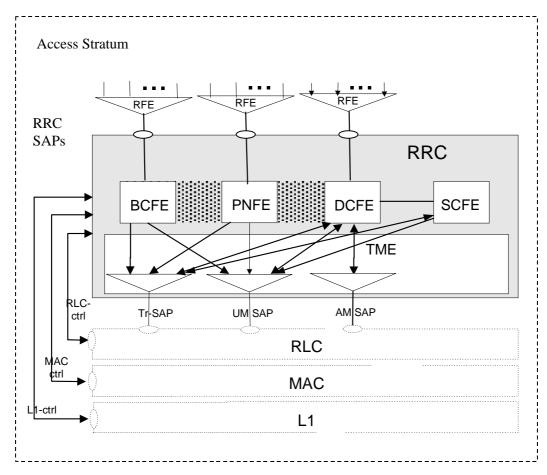


Figure 4.2-2: UTRAN side RRC model (DS-MAP system)

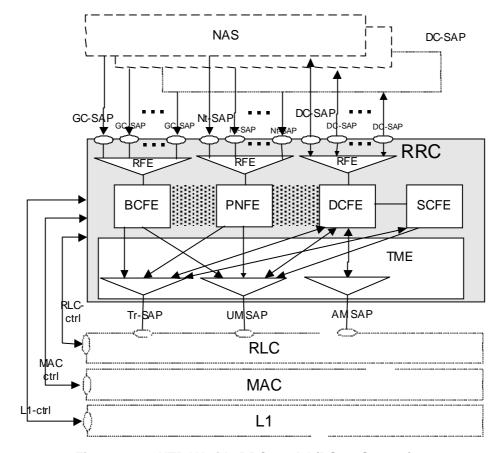


Figure 4.2-3: UTRAN side RRC model (DS-41 System)

# 4.3 Protocol specification principles

This protocol specification is based on the applicable general guidelines given in [14].

In this specification, a notation of variables is used. The variables are defined in subclause 13.4. Variables are typically used to represent a status or a result of an action, such as reception of an information element in a message, which is used to specify a behaviour somewhere else in the specification, such as when setting the value of an information element in a transmitted message. The variables only serve the purpose of specifying the protocol, and do not therefore impose any particular implementation.

When specifying the UE behaviour at reception of messages, the behaviour that is tied to reception or non-reception of individual information elements, and in some cases combinations of information elements, is specified in one location (subclause 8.6).

# 5 RRC Functions and Services provided to upper layers

# 5.1 RRC Functions

The RRC performs the functions listed below. A more detailed description of these functions is provided in [2]:

- Broadcast of information related to the non-access stratum (Core Network);
- Broadcast of information related to the access stratum;
- Establishment, maintenance and release of an RRC connection between the UE and UTRAN;
- Establishment, reconfiguration and release p-t-p of Radio Bearers;
- Establishment, reconfiguration and release of p-t-m Radio Bearers;
- Assignment, reconfiguration and release of radio resources for the RRC connection;
- RRC connection mobility functions;
- Control of requested QoS;
- UE measurement reporting and control of the reporting;
- Outer loop power control;
- Control of ciphering;
- Slow DCA (TDD mode);
- Paging;
- Initial cell selection and cell re-selection;
- Arbitration of radio resources on uplink DCH;
- RRC message integrity protection;
- Timing advance (TDD mode);
- CBS control:
- MBMS control.

# 5.2 RRC Services provided to upper layers

The RRC offers the following services to upper layers, a description and primitives of these services are provided in [2] and [17].

- General Control;
- Notification;
- Dedicated control.

The RRC layer provides the UE-UTRAN portion of signalling connections to the upper layers to support the exchange of upper layer's information flow. The signalling connection is used between the user equipment and the core network to transfer upper layer information. For each core network domain, at most one signalling connection may exist at the same time. The RRC layer maps the signalling connections for one UE on a single RRC connection. For the upper layer data transfer on signalling connections, the RRC layer supports the discrimination between two different classes, named "High priority" (corresponding to "SAPI 0" for a GSM-MAP based core network) and "Low priority" (corresponding to "SAPI 3" for a GSM-MAP based core network).

# 5.3 Primitives between RRC and upper layers

The primitives between RRC and the upper layers are described in [17].

# 6 Services expected from lower layers

# 6.1 Services expected from Layer 2

The services provided by layer 2 are described in [2], [15] and [16].

# 6.2 Services expected from Layer 1

The services provided by layer 1 are described in [2].

# 6.3 Signalling Radio Bearers

The Radio Bearers (RB) available for transmission of RRC messages are defined as "signalling radio bearers" and are specified in the following. The UE and UTRAN shall select the signalling radio bearers for RRC messages using RLC-TM, RLC-UM or RLC-AM on the DCCH and CCCH, according to the following:

- Signalling radio bearer RB0 shall be used for all messages sent on the CCCH (UL: RLC-TM, DL: RLC-UM).
- Signalling radio bearer RB1 shall be used for all messages sent on the DCCH, when using RLC unacknowledged mode (RLC-UM).
- Signalling radio bearer RB2 shall be used for all messages sent on the DCCH, when using RLC acknowledged mode (RLC-AM), except for the RRC messages carrying higher layer (NAS) signalling.
- Signalling radio bearer RB3 and optionally Signalling radio bearer RB4 shall be used for the RRC messages carrying higher layer (NAS) signalling and sent on the DCCH in RLC acknowledged mode (RLC-AM), as specified in subclauses 8.1.8., 8.1.9 and 8.1.10.
- Additionally, RBs whose identities shall be set between 5 and 32 may be used as signalling radio bearer for the RRC messages on the DCCH sent in RLC transparent mode (RLC-TM).
- RRC messages on the SHCCH are mapped either on RACH or on the USCH in the uplink using TM and either on FACH or on the DSCH using RLC-UM. These messages are only specified for TDD mode.

- RRC messages on the MCCH are mapped on FACH using RLC-UM. The transport channel configuration for MCCH is indicated on BCCH. For this signalling radio bearer no identity is applied.
- RRC messages on the MSCH are mapped on FACH using RLC-UM. The transport channel configuration for MSCH is indicated on MCCH. For this signalling radio bearer no identity is applied.

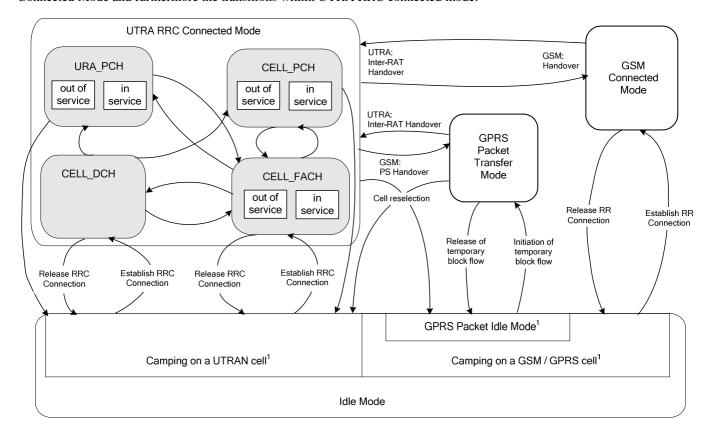
The Radio Bearer configuration for signalling radio bearer RB0, SHCCH, BCCH on FACH, PCCH on PCH, BCCH mapped to BCH, RB0 mapped on HS-DSCH (FDD only), BCCH mapped on HS-DSCH (FDD only) and PCCH mapped to HS-DSCH (FDD only) are specified in subclauses 13.6, 13.6a, 13.6b, 13.6c, 13.6e, 13.6f and 13.6g.

Ciphering is never applied to signalling radio bearer RB0 or signalling radio bearers using RLC TM.

# 7 Protocol states

# 7.1 Overview of RRC States and State Transitions including GSM

Figure 7.1-1 shows the RRC states in UTRA RRC Connected Mode, including transitions between UTRA RRC connected mode and GSM connected mode for CS domain services, and between UTRA RRC connected mode and GSM/GPRS packet modes for PS domain services. It also shows the transitions between Idle Mode and UTRA RRC Connected Mode and furthermore the transitions within UTRA RRC connected mode.



NOTE<sup>1</sup>: The indicated division within Idle Mode is only included for clarification and shall not be interpreted as states.

Figure 7.1-1: RRC States and State Transitions including GSM

The RRC connection is defined as a point-to-point bi-directional connection between RRC peer entities in the UE and the UTRAN characterised by the allocation of a U-RNTI. A UE has either zero or one RRC connection.

If NAS informs AS about a new selected PLMN, registered PLMN or equivalent PLMN list while being in connected mode, the UE shall perform the actions according to subclause 8.5.24.

NOTE: The state transitions are specified in clause 8.

# 7.2 Processes in UE modes/states

NOTE: This subclause specifies what processes shall be active in the UE in the different RRC modes/states. The related procedures and the conditions on which they are triggered are specified either in clause 8 or elsewhere in the relevant process definition.

## 7.2.1 UE Idle mode

UE processes that are active in UE Idle mode are specified in [4].

The UE shall perform a periodic search for higher priority PLMNs as specified in [25], unless the UE is receiving MBMS services via p-t-m radio bearers.

A UE that is capable of receiving MBMS services on cells operating in MBSFN mode as specified in subclause 8.1.1.6.3 is operating in idle mode and acts on RRC messages and system information received from this cell operating in MBSFN mode independently from messages received from cells not operating in MBSFN mode. This implies that procedures executed based on messages and system information received from a cell operating in MBSFN mode shall not interact with messages and system information received from a cell not operating in MBSFN mode unless explicitly specified otherwise.

- NOTE 1: This implies that the UE is operating an independent stack for the reception of MBMS services on cells operating in MBSFN mode as specified in subclause 8.1.1.6.3.
- NOTE 2: For 1.28 Mcps TDD, if the cell is operating in MBSFN mode, system information and MCCH messages are transmitted on the MBSFN Special Timeslot [30].

# 7.2.2 UTRA RRC Connected mode

In this specification unless otherwise mentioned "connected mode" shall refer to "UTRA RRC connected mode".

#### 7.2.2.1 URA PCH or CELL PCH state

In the URA\_PCH or CELL\_PCH state the UE shall perform the following actions:

NOTE: For TDD, neither DCCH nor DTCH are available in these states.

For FDD, DCCH and DTCH reception on HS-DSCH may be configured in CELL\_PCH state, if the UE supports HS-DSCH reception in CELL\_PCH and URA\_PCH state. Otherwise, neither DCCH nor DTCH are available in CELL\_PCH state. In URA\_PCH, neither DCCH nor DTCH are available.

- 1> if the UE is "in service area":
  - 2> maintain up-to-date system information as broadcast by the serving cell as specified in the subclause 8.1.1;
  - 2> perform cell reselection process as specified in [4];
  - 2> perform a periodic search for higher priority PLMNs as specified in [25], unless the UE is receiving MBMS services via p-t-m radio beareres;

NOTE: If the DRX cycle length is 80ms, then a search for higher priority PLMNs may not identify all the available PLMNs due to the paging occasion on the current serving cell coinciding with the MIB of the cell of interest.

- 2> for TDD; or
- 2> for FDD, if the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state; or
- 2> if the IE "HS-DSCH paging system information" is not included in System Information Block type 5 or System Information Block type 5bis:

3> monitor the paging occasions and PICH monitoring occasions determined according to subclauses 8.6.3.1a, 8.6.3.2 and 8.5.42 and receive paging information on the PCH mapped on the S-CCPCH selected by the UE according to the procedure in subclause 8.5.19;

#### 2> else:

- 3> monitor the paging occasions and PICH monitoring occasions determined according to subclauses 8.6.3.1a, 8.6.3.2 and 8.5.39 and receive PCCH on the HS-DSCH mapped on the HS-PDSCH, or DCCH and DTCH on the HS-DSCH mapped on the HS-PDSCH and the associated HS-SCCH selected by the UE according to the procedure in subclause 8.5.40.
- 2> act on RRC messages received on PCCH, BCCH, and DCCH (FDD only);
- 2> perform measurements process according to measurement control information as specified in subclause 8.4 and in subclause 14.4;
- 2> maintain up-to-date BMC data if it supports Cell Broadcast Service (CBS) as specified in [37];
- 2> act on RRC messages received on MCCH if it supports MBMS and has activated an MBMS service as specified in subclause 8.7;
- 2> run timer T305 for periodical URA update if the UE is in URA\_PCH or for periodical cell update if the UE is in CELL\_PCH.
- 1> if the UE is "out of service area":
  - 2> perform cell selection process as specified in [4];
  - 2> run timer T316;
  - 2> run timer T305 or T307:
  - 2> if the cell selection process fails to find a suitable cell after a complete scan of all RATs and all frequency bands supported by the UE, the UE shall after a minimum of TimerOutOfService time (default value 30 s) of being "out of service area":
    - 3> indicate all available PLMNs to NAS to enable the selection of a new PLMN;
    - 3> if an acceptable cell is found then the UE shall camp on that cell to obtain limited service as defined in [4] and, perform actions according to subclause 8.5.24;
    - 3> else if no acceptable cell is found, the UE shall continue looking for an acceptable cell as defined in [4].

# 7.2.2.2 CELL\_FACH state

In the CELL\_FACH state the UE shall perform the following actions:

NOTE: DCCH and, if configured, DTCH are available in this state.

- 1> if the UE is "in service area":
  - 2> maintain up-to-date system information as broadcast by the serving cell as specified in subclause 8.1.1;
  - 2> perform cell reselection process as specified in [4];
  - 2> perform measurements process according to measurement control information as specified in subclause 8.4 and in subclause 14.4;
  - 2> run timer T305 (periodical cell update);
  - 2> select and configure the RB multiplexing options applicable for the transport channels to be used in this RRC state;
  - 2> for TDD; or
  - 2> for FDD, if the UE does not support HS-DSCH reception in CELL\_FACH state; or

- 2> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 3> listen to all FACH transport channels mapped on the S-CCPCH selected by the UE according to the procedure in subclause 8.5.19.
- 2> else:
  - 3> if variable H\_RNTI is set:
    - 4> receive physical channels HS-SCCH(s) using the value of the variable H\_RNTI as UE identity and parameters given by the IE(s) "HS-DSCH common system information" according to the procedure in subclause 8.5.36.
  - 3> else:
    - 4> if variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED is set to TRUE:
      - 5> receive physical channel(s) of type HS-SCCH with selected common H-RNTI using parameters given by the IE(s) "HS-DSCH common system information" according to the procedure in subclause 8.5.37.
- 2> act on RRC messages received on BCCH, CCCH and DCCH;
- 2> act on RRC messages received on MCCH if it supports MBMS and has activated an MBMS service as specified in subclause 8.7;
- 2> act on RRC messages received on, if available, SHCCH (TDD only).
- 1> if the UE is "out of service area":
  - 2> perform cell selection process as specified in [4];
  - 2> run timers T305 (periodical cell update), and T317 (cell update when re-entering "in service") or T307 (transition to Idle mode), if started;
  - 2> run timers T314 and/or T315, if started:
  - 2> if the cell selection process fails to find a suitable cell after a complete scan of all RATs and all frequency bands supported by the UE, the UE shall after a minimum of TimerOutOfService time (default value 30 seconds) of being "out of service area":
    - 3> indicate all available PLMNs to NAS to enable the selection of a new PLMN;
    - 3> if an acceptable cell is found then the UE shall camp on that cell to obtain limited service as defined in [4] and perform actions according to subclause 8.5.24;
    - 3> else if no acceptable cell is found, the UE shall continue looking for an acceptable cell as defined in [4].

#### 7.2.2.3 CELL DCH state

In the CELL\_DCH state the UE shall perform the following actions:

NOTE: DCCH and, if configured, DTCH are available in this state.

- 1> read the system information as specified in subclause 8.1.1 (for UEs in TDD mode);
- 1> perform measurements process according to measurement control information as specified in subclause 8.4 and in clause 14;
- 1> select and configure the RB multiplexing options applicable for the transport channels to be used in this RRC state;
- 1> act on RRC messages received on DCCH;
- 1> act on RRC messages received on BCCH (applicable only to UEs with certain capabilities and in FDD mode);

- 1> act on RRC messages received on MCCH if it supports MBMS and has activated an MBMS service as specified in subclause 8.7 (applicable only to UEs supporting MBMS with certain capabilities);
- 1> act on RRC messages received on BCCH (TDD only) and, if available, SHCCH (TDD only).

NOTE: If any of the above procedures results in different HS-DSCH and E-DCH serving cells, the UE behaviour is unspecified.

# 8 RRC procedures

The UE shall be able to process several simultaneous RRC procedures. After the reception of a message which invoked a procedure, the UE shall be prepared to receive and act on another message which may invoke a second procedure. Whether this second invocation of a procedure (transaction) is accepted or rejected by the UE is specified in the subclauses of this clause, and in particular in subclause 8.6.3.11 (RRC transaction identifier).

On receiving a message the UE shall:

- 1> check that the message is addressed to the UE (e.g. by checking the IE "Initial UE identity" or the IE "U-RNTI" for messages on CCCH);
- 1> discard the messages addressed to other UEs.

and then the UE shall:

- 1> apply integrity check as appropriate;
- 1> proceed with error handling as specified in clause 9;
- 1> act upon the IE "RRC transaction identifier";
- 1> continue with the procedure as specified in the relevant subclause.

NOTE: Due to an error in the Release '99 ASN.1, a Release '99 UE is unable to determine which UE is addressed by a downlink CCCH message corresponding to a protocol version later than Release '99. As a result, the Release '99 UE will not be able to return a protocol error according to subclause 9.3a. Therefore, the UTRAN should only send a Release '99 message version towards UEs that have indicated conformance to Release '99 in the IE "Access stratum release indicator".

The RRC entity in the UE shall consider PDUs to have been transmitted when they are submitted to the lower layers. If the RRC entity in the UE submits a message for transmission using AM RLC, it shall consider the message successfully transmitted when UTRAN reception of all relevant PDUs is acknowledged by RLC. In the UE, timers are started when the PDUs are sent on the radio interface in the case of the transmission using the CCCH.

# 8.1 RRC Connection Management Procedures

# 8.1.1 Broadcast of system information

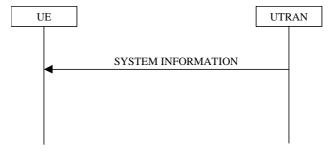


Figure 8.1.1-1: Broadcast of system information

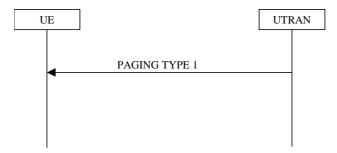


Figure 8.1.1-2: Notification of system information modification for UEs in idle mode, CELL\_PCH state and URA\_PCH state

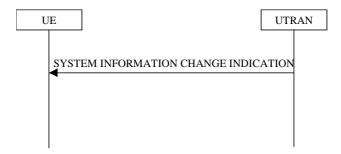


Figure 8.1.1-3: Notification of system information modification for UEs in CELL\_FACH and CELL\_DCH(TDD only) state

#### 8.1.1.1 General

The purpose of this procedure is to broadcast system information from the UTRAN to UEs in a cell.

## 8.1.1.1.1 System information structure

The system information elements are broadcast in *system information blocks*. A system information block groups together system information elements of the same nature. Different system information blocks may have different characteristics, e.g. regarding their repetition rate and the requirements on UEs to re-read the system information blocks.

The system information is organised as a tree. A *master information block* gives references and scheduling information to a number of system information blocks in a cell. The system information blocks contain the actual system information. The master information block may optionally also contain reference and scheduling information to one or two *scheduling blocks*, which give references and scheduling information for additional system information blocks. Scheduling information for a system information block may only be included in either the master information block or one of the scheduling blocks.

For all system information blocks except System Information Block types 15.2, 15.3 and 16, the content is the same in each occurrence for system information blocks using value tag. System Information Block types 15.2, 15.3 and 16 may occur more than once with different content. In this case scheduling information is provided for each such occurrence of the system information block. System information blocks that do not use value tag may have different content for each occurrence.

### 8.1.1.1.2 System information blocks

Table 8.1.1 specifies all system information blocks and their characteristics.

The *area scope column* in table 8.1.1 specifies the area where a system information block's value tag is valid. If the area scope is *cell*, the UE shall consider the system information block to be valid only in the cell in which it was read. If system information blocks have been previously stored for this cell, the UE shall check whether the value tag for the system information block in the entered cell is different compared to the stored value tag. If the area scope is *PLMN* or *Equivalent PLMN*, the UE shall check the value tag for the system information block when a new cell is selected. If the value tag for the system information block in the new cell is different compared to the value tag for the system information block stored in the UE, the UE shall re-read the system information block. If the area scope is *PLMN*, the

UE shall consider the system information block to be valid only within the PLMN in which it was read. If the area scope is *Equivalent PLMN*, the UE shall consider the system information block to be valid within the PLMN in which it was received and all PLMNs which are indicated by higher layers to be equivalent.

For System information block types 15.2, 15.3 and 16, which may have multiple occurrences, each occurrence has its own independent value tag. The UE- shall re-read a particular occurrence if the value tag of this occurrence has changed compared to that stored in the UE.

The *UE mode/state column when block is valid* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block shall be regarded as valid by the UE. In other words, the indicated system information block becomes invalid upon change to a mode/state that is not included in this column. System Information Block Type 16 remains also valid upon transition to or from GSM/GPRS. In some cases, the states are inserted in brackets to indicate that the validity is dependent on the broadcast of the associated System Information Blocks by the network as explained in the relevant procedure subclause.

The *UE mode/state column when block is read* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block may be read by the UE. The UE shall have the necessary information prior to execution of any procedure requiring information to be obtained from the appropriate system information block. The requirements on the UE in terms of when to read the system information may therefore be derived from the procedure specifications that specify which IEs are required in the different UE modes/states in conjunction with the different performance requirements that are specified.

#### The UE shall:

- 1> if variable DEFERRED MEASUREMENT STATUS is set to FALSE:
  - 2> if System Information Block type 11 is referenced in the master information block or in the scheduling blocks:
    - 3> if System Information Block type 12 is not referenced in the master information block or in the scheduling blocks, or broadcast of System Information Block type 12 is not indicated in System Information Block type 11:
      - 4> have read and acted upon System Information Block type 11 and System Information Block type 11bis, if scheduled on BCH, in a cell when the UE transmits an RRC message on RACH.

#### 3> else:

- 4> have read and acted upon System Information Block type 11 and System Information Block type 11bis, if scheduled on BCH, in a cell before the UE transmits the RRC CONNECTION REQUEST message.
- 4> have read and acted upon both System Information Block type 11 and System Information Block type 11bis, if scheduled on BCH, and System Information Block type 12 in a cell when:
  - 5> the UE transmits an RRC message on RACH in RRC connected mode; or
  - 5> the UE receives a message commanding to enter Cell\_DCH state.

#### 1> else:

- 2> the UE may transmit an RRC message on RACH before having read and acted upon System Information Block type 11, System Information Block type 11bis and System Information Block type 12, if scheduled on BCH.
- NOTE 1: There are a number of system information blocks that include the same IEs while the UE mode/state in which the information is valid differs. This approach is intended to allows the use of different IE values in different UE mode/states.
- NOTE 2: System Information Block Type 16 is also obtained by a UE while in GSM/GPRS. The details of this are not within the scope of this specification.

The *Scheduling information* column in table 8.1.1 specifies the position and repetition period for the System Information Block.

The *modification of system information* column in table 8.1.1 specifies the update mechanisms applicable for a certain system information block. For system information blocks with a value tag, the UE shall update the information according to subclause 8.1.1.7.1 or 8.1.1.7.2. For system information blocks with an expiration timer, the UE shall, when the timer expires, perform an update of the information according to subclause 8.1.1.7.4.

Table 8.1.1: Specification of system information block characteristics

| System information block                 | Area<br>scope | UE<br>mode/state<br>when block is<br>valid                                    | UE<br>mode/state<br>when block<br>is read                                     | Scheduling information  | Modification of system information | Additional comment  |
|--|---------------|---|---|---|------------------------------------|---|
| Master<br>information<br>block           | Cell          | Idle mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only)   | Idle mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only)   | SIB_POS = 0<br>SIB_REP = 8 (FDD)<br>SIB_REP = 8, 16,<br>32 (TDD)<br>SIB_OFF=2 | Value tag                          |   |
| Scheduling<br>block 1                    | Cell          | Idle mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only)   | Idle mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only)   | Specified by the IE "Scheduling information" in MIB                           | Value tag                          | See Note 3  |
| Scheduling<br>block 2                    | Cell          | Idle mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only)   | Idle mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only)   | Specified by the IE "Scheduling information" in MIB                           | Value tag                          | See Note 3  |
| System information block type 1          | Cell          | Idle mode<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH                  | Idle,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH                                   | Specified by the IE "Scheduling information"                                  | Value tag                          | Note: The area scope of SIB1 is Cell but for compliance to earlier versions of the specification the coding of the scheduling information for SIB1 contains the 'PLMN value tag' information element.  See Note 3 |
| System information block type 2          | Cell          | URA_PCH   | URA_PCH   | Specified by the IE "Scheduling information"                                  | Value tag                          | See Note 3  |
| System information block type 3          | Cell          | Idle mode,<br>(CELL_FACH,<br>CELL_PCH,<br>URA_PCH)                            | Idle mode,<br>(CELL_FACH,<br>CELL_PCH,<br>URA_PCH)                            | Specified by the IE "Scheduling information"                                  | Value tag                          |   |
| System information block type 4          | Cell          | CELL_FACH,<br>CELL_PCH,<br>URA_PCH  | CELL_FACH,<br>CELL_PCH,<br>URA_PCH  | Specified by the IE "Scheduling information"                                  | Value tag                          | If System information block type 4 is not broadcast in a cell, the connected mode UE shall apply information in System information block type 3 in connected mode. See Note 3                                     |
| System information block type 5 and 5bis | Cell          | Idle mode,<br>(CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only)) | Idle mode,<br>(CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only)) | Specified by the IE "Scheduling information"                                  | Value tag                          | System information<br>block type 5bis is sent<br>instead of system<br>information block type 5<br>in cells that use Band<br>IV or Band IX or Band<br>X.   |

| System information block            | Area<br>scope | UE<br>mode/state<br>when block is<br>valid                                  | UE<br>mode/state<br>when block<br>is read                                   | Scheduling information                       | Modification of system information   | Additional comment   |
|-------------------------------------|---------------|---|---|--|--|--|
| System information block type 6     | Cell          | CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only)               | CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only)               | Specified by the IE "Scheduling information" | Value tag  | If system information<br>block type 6 is not<br>broadcast in a cell, the<br>connected mode UE<br>shall read System<br>information block type 5<br>or System information<br>block type 5bis.  |
|                                     |               |   |   |  |  | If some of the optional IEs are not included in System information block type 6, the UE shall read the corresponding IEs in System information block type 5 or System information block type 5bis.   |
|                                     |               |   |   |  |  | In TDD mode system information block 6 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7 and/or if shared transport channels are assigned to the UE. If in these cases system information block type 6 is not broadcast the UE shall read system information block type 5. See Note 3 |
| System information block type 7     | Cell          | Idle mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only) | Idle mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH<br>(TDD only) | Specified by the IE "Scheduling information" | Expiration<br>timer =<br>MAX(32,<br>SIB_REP *<br>ExpirationTi<br>meFactor) | In TDD mode system information block type 7 shall only be read in CELL_DCH if shared transport channels are assigned to the UE. See Note 3   |
| System information block type 11    | Cell          | Idle mode<br>(CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH)              | Idle mode<br>(CELL_FACH,<br>CELL_PCH,<br>URA_PCH)                           | Specified by the IE "Scheduling information" | Value tag  |  |
| System information block type 11bis | Cell          | Idle mode<br>(CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH)              | Idle mode<br>(CELL_FACH,<br>CELL_PCH,<br>URA_PCH)                           | Specified by the IE "Scheduling information" | Value tag  | See Note 3   |

| System information block                  | Area<br>scope | UE<br>mode/state<br>when block is<br>valid                    | UE<br>mode/state<br>when block<br>is read                     | Scheduling information                       | Modification of system information   | Additional comment   |
|---|---------------|---|---|--|--|--|
| System<br>information<br>block type<br>12 | Cell          | CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH               | Idle mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Specified by the IE "Scheduling information" | Value tag  | If system information block type 12 is not broadcast in a cell, the connected mode UE shall read System information block type 11.  If some of the optional IEs are not included in System information block type 12, the UE shall read the corresponding IEs in System information block type 11.  See Note 3 |
| System information block type 13          | Cell          | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA PCH              | Specified by the IE "Scheduling information" | Value tag  | See Note 3   |
| System information block type 13.1        | Cell          | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Specified by the IE "Scheduling information" | Value tag  | See Note 3   |
| System information block type 13.2        | Cell          | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Specified by the IE "Scheduling information" | Value tag  | See Note 3   |
| System information block type 13.3        | Cell          | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Specified by the IE "Scheduling information" | Value tag  | See Note 3   |
| System information block type 13.4        | Cell          | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Specified by the IE "Scheduling information" | Value tag  | See Note 3   |
| System<br>information<br>block type<br>14 | Cell          | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH | Specified by the IE "Scheduling information" | Expiration<br>timer =<br>MAX(32,<br>SIB_REP *<br>ExpirationTi<br>meFactor) | This system information block is used in 3.84 Mcps TDD and 7.68 Mcps TDD mode only. System information block type 14 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7. See Note 3  |
| System information block type 15          | Cell          | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Specified by the IE "Scheduling information" | Value tag  | See Note 3   |
| System information block type 15bis       |               | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Specified by the IE "Scheduling information" | Value tag  | See Note 3   |
| System information block type 15.1        | Cell          | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Specified by the IE "Scheduling information" | Value tag  | See Note 3   |

| System information block                    | Area<br>scope          | UE<br>mode/state<br>when block is<br>valid                    | UE<br>mode/state<br>when block<br>is read        | Scheduling information                       | Modification of system information | Additional comment  |
|---|------------------------|---|--|--|------------------------------------|---|
| System information block type 15.1bis       |                        | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | See Note 3  |
| System<br>information<br>block type<br>15.2 | Cell                   | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | For this system information block there may be multiple occurrences See Note 3  |
| System information block type 15.2bis       | Cell                   | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | For this system information block there may be multiple occurrences See Note 3  |
| System information block type 15.3          | PLMN                   | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | For this system information block there may be multiple occurrences See Note 3  |
| System information block type 15.3bis       | PLMN                   | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | For this system information block there may be multiple occurrences See Note 3  |
| System information block type 15.4          | Cell                   | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | See Note 3  |
| System information block type 15.5          | Cell                   | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | See Note 3  |
| System information block type 15.6          | Cell                   | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | See Note 3  |
| System information block type 15.7          | Cell                   | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | See Note 3  |
| System information block type 15.8          | Cell                   | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH              | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | See Note 3  |
| System<br>information<br>block type<br>16   | Equival<br>ent<br>PLMN | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH | Idle Mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | For this system information block there may be multiple occurrences. This system information block is also valid while in GSM/GPRS. See Note 3                              |
| System<br>information<br>block type<br>17   | Cell                   | CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH               | CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH  | Specified by the IE "Scheduling information" | Expiration<br>timer =<br>SIB_REP   | This system information block is used in TDD mode only. System information block type 17 shall only be read if shared transport channels are assigned to the UE. See Note 3 |

| System information block                  | Area<br>scope | UE<br>mode/state<br>when block is<br>valid                    | UE<br>mode/state<br>when block<br>is read        | Scheduling<br>information                    | Modification of system information | Additional comment |
|---|---------------|---|--|--|------------------------------------|--------------------|
| System<br>Information<br>Block type<br>18 | Cell          | Idle mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH,<br>CELL_DCH | Idle mode,<br>CELL_FACH,<br>CELL_PCH,<br>URA_PCH | Specified by the IE "Scheduling information" | Value tag                          | See Note 3         |

- NOTE 3: The UE behaviour is unspecified if this system information block is received on a cell operating in MBSFN mode as indicated in subclause 8.1.1.6.3. A network should not send these system information blocks on a cell operating in MBSFN mode.
- NOTE 4: For 1.28 Mcps TDD, if a cell is operating in MBSFN mode, system information blocks are transmitted on the MBSFN Special Timeslot [30].

### 8.1.1.1.3 Segmentation and concatenation of system information blocks

A generic SYSTEM INFORMATION message is used to convey the system information blocks on the BCCH. A given BCCH may be mapped onto either a BCH or a FACH transport channel according to subclause 8.1.1.1.2. The size of the SYSTEM INFORMATION message shall fit the size of a BCH or a FACH transport block.

The RRC layer in UTRAN performs segmentation and concatenation of encoded system information blocks. If the encoded system information block is larger than the size of a SYSTEM INFORMATION message, it will be segmented and transmitted in several messages. If the encoded system information block is smaller than a SYSTEM INFORMATION message, UTRAN may concatenate several system information blocks, or the first segment or the last segment into the same message as specified in the remainder of this clause.

Four different segment types are defined:

- First segment;
- Subsequent segment;
- Last segment;
- Complete.

Each of the types - *First*, *Subsequent* and *Last segment* - is used to transfer segments of a master information block, scheduling block or a system information block. The segment type, *Complete*, is used to transfer a complete master information block, complete scheduling block or a complete system information block.

Each segment consists of a header and a data field. The data field carries the encoded system information elements. The header contains the following parameters:

- The number of segments in the system information block (SEG\_COUNT). This parameter is only included in the header if the segment type is "First segment".
- SIB type. The SIB type uniquely identifies the master information block, scheduling block or a system information block.
- Segment index. This parameter is only included in the header if the segment type is "Subsequent segment" or "Last segment".

UTRAN may combine one or several segments of variable length in the same SYSTEM INFORMATION message. The following combinations are allowed:

- 1. No segment;
- 2. First segment;
- 3. Subsequent segment;
- 4. Last segment;

- 5. Last segment + First segment;
- 6. Last segment + one or several Complete;
- 7. Last segment + one or several Complete + First segment;
- 8. One or several Complete;
- 9. One or several Complete + First segment;
- 10. One Complete of size 215 to 226;
- 11. Last segment of size 215 to 222.

The "No segment" combination is used when there is no master information block, scheduling block or system information block scheduled for a specific BCH transport block.

UEs are not required to support the reception of multiple occurrences of the same system information block type within one SYSTEM INFORMATION message.

NOTE: Since the SIB type is the same for each occurrence of the system information block, the UE does not know the order in which the occurrences, scheduled for this SYSTEM INFORMATION message, appear. Therefore, the UE is unable to determine which scheduling information, e.g., value tag relates to which occurrence of the system information block.

### 8.1.1.1.4 Re-assembly of segments

The RRC layer in the UE shall perform re-assembly of segments. All segments belonging to the same master information block, scheduling block or system information block shall be assembled in ascending order with respect to the segment index. When all segments of the master information block, scheduling block or a system information block have been received, the UE shall perform decoding of the complete master information block, scheduling block or system information block. For System Information Block types 15.2, 15.3 and 16, which may have multiple occurrences, each occurrence shall be re-assembled independently.

The UE shall discard system information blocks of which segments were missing, of which segments were received out of sequence and/or for which duplicate segments were received. The only valid sequence is an ascending one with the sequence starting with the First Segment of the associated System Information Block.

If the UE receives a Subsequent segment or Last segment where the index in IE "Segment index" is equal to or larger than the number of segments stated in IE "SEG\_COUNT" in the scheduling information for that scheduling block or system information block:

- 1> the UE may:
  - 2> read all the segments to create a system information block as defined by the scheduling information read by the UE;
  - 2> store the content of the system information block with a value tag set to the value NULL; and
  - 2> consider the content of the scheduling block or system information block as valid:
    - 3> until it receives the same type of scheduling block or system information block in a position according to its scheduling information; or
    - 3> at most for 6 hours after reception.
- 1> and the UE shall:
  - 2> re-read scheduling information for that scheduling block or system information block.

If the UE receives a Subsequent segment or Last segment where the index in IE "Segment index" is equal to or larger than the number of segments stated in IE "SEG\_COUNT" in the First segment, the UE shall

- 1> discard all segments for that master information block, scheduling block or system information block; and
- 1> re-read the scheduling information for that system information block;

1> then re-read all segments for that system information block.

#### 8.1.1.1.5 Scheduling of system information

Scheduling of system information blocks is performed by the RRC layer in UTRAN. If segmentation is used, it should be possible to schedule each segment separately.

To allow the mixing of system information blocks with short repetition period and system information blocks with segmentation over many frames, UTRAN may multiplex segments from different system information blocks. Multiplexing and de-multiplexing is performed by the RRC layer.

The scheduling of each system information block broadcast on a BCH transport channel is defined by the following parameters:

- the number of segments (SEG\_COUNT);
- the repetition period (SIB\_REP). The same value applies to all segments;
- the position (phase) of the first segment within one cycle of the Cell System Frame Number (SIB\_POS(0)). Since system information blocks are repeated with period SIB\_REP, the value of SIB\_POS(i), i = 0, 1, 2, ... SEG\_COUNT-1 must be less than SIB\_REP for all segments;
- the offset of the subsequent segments in ascending index order (SIB\_OFF(i), i = 1, 2, ... SEG\_COUNT-1) The position of the subsequent segments is calculated using the following: SIB\_POS(i) = SIB\_POS(i-1) + SIB\_OFF(i).

The scheduling is based on the Cell System Frame Number (SFN). The SFN of a frame at which a particular segment, i, with i = 0, 1, 2, ... SEG\_COUNT-1 of a system information block occurs, fulfils the following relation:

$$SFN \mod SIB\_REP = SIB\_POS(i)$$

In FDD and TDD the scheduling of the master information block is fixed as defined in table 8.1.1. For TDD, UTRAN may apply one of the values allowed for the master information block's repetition period. The value that UTRAN is using in TDD is not signalled; UEs have to determine it by trial and error.

#### 8.1.1.2 Initiation

The system information is continuously broadcast on a regular basis in accordance with the scheduling defined for each system information block.

### 8.1.1.3 Reception of SYSTEM INFORMATION messages by the UE

The UE shall read SYSTEM INFORMATION messages broadcast on a BCH transport channel in idle mode and in the connected mode in states CELL\_FACH, CELL\_PCH, URA\_PCH and CELL\_DCH (TDD only).

In idle mode and connected mode different combinations of system information blocks are valid. The UE shall acquire the system information blocks that are needed according to table 8.1.1.

The UE may store system information blocks with *cell*, *PLMN* or *Equivalent PLMN* area scope (including their value tag if applicable) for different cells and different PLMNs, to be used if the UE returns to these cells.

The UE shall consider all stored system information blocks as invalid after it has been switched off. Some information obtained from system information may be stored by the UE or in the USIM for use in a stored information cell selection.

When selecting a new cell the UE shall consider all current system information blocks with area scope cell to be invalid. If the UE has stored valid system information blocks for the newly selected cell, the UE may set those as current system information blocks.

After selecting a new cell and this cell broadcasts an IE "PLMN Identity" in the MIB which is different from the IE "PLMN Identity" broadcast in the MIB in the previously selected cell, the UE shall consider all current system information blocks with area scope *PLMN* to be invalid. If the UE has previously stored valid system information blocks for the selected cell of the new PLMN, the UE may set those as current system information blocks.

When NAS informs AS about a new selected PLMN, the UE shall consider all stored system information blocks with area scope *Equivalent PLMN* to be invalid.

#### 8.1.1.4 Void

# 8.1.1.5 Actions upon reception of the Master Information Block and Scheduling Block(s)

When selecting a new cell, the UE shall read the master information block. The UE may use the pre-defined scheduling information to locate the master information block in the cell.

Upon reception of the master information block, the UE shall:

- 1> if the IE "Multiple PLMN List" is not present in the Master Information Block:
  - 2> consider the IE "PLMN identity" in the Master Information Block as the PLMN identity of the cell.
- 1> else:
  - 2> consider the PLMN identities in the IE "Multiple PLMN List" as the PLMN identities of the cell;
  - 2> when reading the "Multiple PLMN List", read all the PLMN identities in the list as follows:
    - 3> if the IE "MIB PLMN Identity" is set to TRUE:
      - 4> read the "PLMN identity" IE in the MIB and consider it as a part of the "Multiple PLMN List".
    - 3> if the IE "MIB PLMN Identity" is set to FALSE:
      - 4> not consider the "PLMN identity" IE in the MIB as a part of the "Multiple PLMN List";
      - 4> not consider the IE "PLMN identity" in the MIB as a PLMN identity of the cell;
      - 4> not forward the PLMN in the IE "PLMN identity" of the MIB to upper layers.
    - 3> if the MCC is not present when reading a IE "PLMN identity with Optional MCC" in the IE "Multiple PLMN List":
      - 4> set the MCC of this PLMN identity equal to the MCC of the closest preceding "PLMN identity with Optional MCC" in the "Multiple PLMN List" that includes an MCC;
      - 4> or, if no such "PLMN identity with Optional MCC" exists, the UE shall set the MCC of this PLMN identity to the MCC of the "PLMN identity" IE in the Master Information Block irrespective of the value of the IE "MIB PLMN Identity".
- 1> if the UE is operating in "ANSI-41 mode" and the IE "PLMN Type" has the value "ANSI-41" or "GSM-MAP and ANSI-41":
  - 2> store the ANSI-41 Information elements contained in the master information block and perform initial process for ANSI-41.
- 1> compare the value tag in the master information block with the value tag stored for this cell and this PLMN in the variable VALUE\_TAG;
- 1> if the value tags differ, or if no IEs for the master information block are stored:
  - 2> store the value tag into the variable VALUE\_TAG for the master information block;
  - 2> read and store scheduling information included in the master information block.
- 1> if the value tags are the same the UE may use stored system information blocks and scheduling blocks using value tag that were stored for this cell and this PLMN as valid system information.

For all system information blocks or scheduling blocks that are supported by the UE referenced in the master information block or the scheduling blocks, the UE shall perform the following actions:

- 1> for all system information blocks with area scope "PLMN" or "Equivalent PLMN" that use value tags:
  - 2> compare the value tag read in scheduling information for that system information block with the value stored within the variable VALUE\_TAG for that system information block;
  - 2> if the value tags differ, or if no IEs for the corresponding system information block are stored:
    - 3> store the value tag read in scheduling information for that system information block into the variable VALUE\_TAG;
    - 3> read and store the IEs of that system information block.
  - 2> if the value tags are the same the UE may use stored system information blocks using value tag that were stored in this PLMN as valid system information.
- 1> for all system information blocks or scheduling blocks with area scope cell that use value tags:
  - 2> compare the value tag read in scheduling information for that system information block or scheduling block with the value stored within the variable VALUE\_TAG for that system information block or scheduling block:
  - 2> if the value tags differ, or if no IEs for the corresponding system information block or scheduling block are stored:
    - 3> store the value tag read in scheduling information for that system information block or scheduling block into the variable VALUE\_TAG;
    - 3> read and store the IEs of that system information block or scheduling block.
  - 2> if the value tags are the same the UE may use stored system information blocks using value tags that were stored for this cell and this PLMN as valid system information.
- 1> for system information blocks which may have multiple occurrences:
  - 2> compare the value tag and the configuration or multiple occurrence identity for the occurrence of the system information blocks read in scheduling information with the value tag and configuration or multiple occurrence identity stored within the variable VALUE\_TAG:
    - 3> if the value tags differ, or if no IEs from the occurrence with that configuration or multiple occurrence identity of the system information block are stored:
      - 4> store the value tag read in scheduling information for that system information block and the occurrence with that configuration or multiple occurrence identity into the variable VALUE\_TAG;
      - 4> read and store the IEs of that system information block.
    - 3> if the value tags and the configuration or multiple occurrence identity are identical to those stored, the UE may use stored occurrences of system information blocks that were stored for this cell and this PLMN as valid system information.

For system information blocks, not supported by the UE, but referenced either in the master information block or in the scheduling blocks, the UE may:

- 1> skip reading this system information block;
- 1> skip monitoring changes to this system information block.

#### If the UE:

- 1> receives a scheduling block at a position different from its position according to the scheduling information for the scheduling block; or
- 1> receives a scheduling block for which scheduling information has not been received:

the UE may:

- 1> store the content of the scheduling block with a value tag set to the value NULL; and
- 1> consider the content of the scheduling block as valid until it receives the same type of scheduling block in a position according to its scheduling information or at most for 6 hours after reception.

If the UE does not find a scheduling block in a position where it should be according to its scheduling information, but a transport block with correct CRC was found at that position, the UE shall:

1> read the scheduling information for this scheduling block.

If the UE does not find the master information block in a position fulfilling:

SFN mod 32 = 0

but a transport block with correct CRC was found at that position), the UE shall:

- 1> consider the master information block as not found; and
- 1> consider the cell to be barred according to [4]; and
- 1> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE "T<sub>barred</sub>".

NOTE: This permits a different repetition for the MIB in later versions for FDD. In TDD it allows for a variable SIB\_REP in this and future releases.

If the cell is not operating in MBSFN mode (according to Section 8.1.1.6.3) then:

- 1> If system information block type 1 is not scheduled on BCH, and system information block type 13 is not scheduled on BCH, the UE shall:
  - 2> consider the cell to be barred according to [4]; and
  - 2> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE "T<sub>barred</sub>".
- 1> If the UE only supports GSM-MAP but finds a cell that broadcasts System Information Block type 13 but not System Information Block type 1, the UE shall:
  - 2> consider the cell barred.
- 1> system information block type 1 is not scheduled on BCH; and
- 1> the UE is operating in "GSM-MAP mode"; and
- 1> the IE "PLMN type" in the Master Information Block has the value "GSM-MAP" or "GSM-MAP and ANSI-41", the UE shall:
  - 2> indicate to upper layers that no CN system information is available.
- 1> If in idle mode and System Information Block type 3 is not scheduled on BCH, the UE shall:
  - 2> consider the cell to be barred according to [4]; and
  - 2> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " $T_{barred}$ ".
- 1> If in connected mode and System Information Block type 3 is not scheduled on BCH, and System Information Block type 4 is not scheduled on BCH, the UE shall:
  - 2> consider the cell to be barred according to [4]; and
  - 2> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " $T_{barred}$ ".

- 1> If in idle mode and neither System Information Block type 5 nor type 5bis is scheduled on BCH, or System Information Block type 5 or type 5bis is scheduled but IE "AICH info" (FDD) or IE "PICH info" is not present, the UE shall:
  - 2> consider the cell to be barred according to [4]; and
  - 2> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " $T_{barred}$ ".
- 1> If in connected mode and neither System Information Block type 5 nor type 5bis is scheduled on BCH, and System Information Block type 6 is not scheduled on BCH, or any of System Information Block type 5, type 5bis or type 6 is scheduled but IE "AICH info" (FDD) or IE "PICH info" is not present, the UE shall:
  - 2> consider the cell to be barred according to [4]; and
  - 2> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE "T<sub>barred</sub>".
- 1> If System Information Block type 7 is not scheduled on BCH, the UE shall:
  - 2> consider the cell to be barred according to [4]; and
  - 2> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " $T_{barred}$ ".
- 1> In 3.84 Mcps TDD and 7.68 Mcps TDD, if System Information Block type 14 is not scheduled on BCH, the UE shall:
  - 2> consider the cell to be barred according to [4]; and
  - 2> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE " $T_{barred}$ ".

If the cell is operating in MBSFN mode (according to section 8.1.1.6.3) then:

- 1> If neither System Information block type 5 nor System Information Block type 5bis is scheduled on the BCH the UE shall:
  - 2> not consider this MBSFN cluster as candidate during the MBSFN cluster selection and MBSFN cluster reselection procedures [4]. The UE may choose to not recheck the status of this MBSFN cluster during the time corresponding to the maximum value for T<sub>barred</sub>.
- 1> If System Information Block type 11 is not scheduled on the BCH the UE shall:
  - 2> not consider this MBSFN cluster as candidate during the MBSFN cluster selection and MBSFN cluster reselection procedures [4]. The UE may choose to not recheck the status of this MBSFN cluster during the time corresponding to the maximum value for T<sub>barred</sub>.

If System Information Block type 5 and System Information Block type 5bis are both scheduled on BCH:

1> the UE behaviour is unspecified.

### 8.1.1.6 Actions upon reception of system information blocks

The UE may use the scheduling information included within the master information block and the scheduling blocks to locate each system information block to be acquired. For System Information Block type 15.1bis, 15.2bis, 15.3bis, 15.6, 15.7 and 15.8 the scheduling information shall be used to associate a system information block with a GNSS.

The UE should only expect one occurrence of the scheduling information for a system information block in the master information block and any of the scheduling blocks except for System Information Block type 16, System Information Block type 15.2 and System Information Block type 15.3, which may have multiple occurrences. System Information Blocks 15.1bis, 15.6, 15.7 and 15.8 have one occurrence for each GANSS supported while System Information Blocks 15.2bis and 15.3bis may have multiple occurrences for each GANSS. However, to enable future introduction of new system information blocks, the UE shall also be able to receive system information blocks other than the ones indicated within the scheduling information. The UE may ignore contents of such system information block.

#### If the UE:

- 1> receives a system information block in a position according to the scheduling information for the system information block; and
- 1> this system information block uses a value tag; or
- 1> this system information block uses a value tag and configuration or multiple occurrence identity:

#### the UE shall:

- 1> store the content of the system information block together with the value of its value tag or the values of configuration and multiple occurrence identity and the associated value tag in the scheduling information for the system information block; and
- 1> consider the content of the system information block valid until, if used, the value tag in the scheduling information for the system information block is changed or at most for 6 hours after reception.

#### If the UE:

- 1> receives a system information block in a position according to the scheduling information for the system information block; and
- 1> this system information block does not use a value tag according to the system information block type:

#### the UE shall:

- 1> store the content of the system information block; and
- 1> start an expiration timer using a value as defined in Table 8.1.1 for that system information block type; and
- 1> consider the content of the system information block valid until, the expiration timer expires.

#### If the UE:

- 1> receives a system information block at a position different from its position according to the scheduling information for the system information block; or
- 1> receives a system information block for which scheduling information has not been received; and
- 1> this system information block uses a value tag:

#### the UE may:

- 1> store the content of the system information block with a value tag set to the value NULL; and
- 1> consider the content of the system information block as valid until it receives the same type of system information block in a position according to its scheduling information or at most for 6 hours after reception.

#### If the UE:

- 1> receives a system information block with multiple occurrences at a position different from its position according to the scheduling information for the system information block; or
- 1> receives a system information block with multiple occurrences for which scheduling information has not been received; and
- 1> this system information block uses a value tag and configuration or multiple occurrence identity:

#### the UE shall:

1> ignore this information.

If the UE does not find a system information block in a position where it should be according to its scheduling information, but a transport block with correct CRC was found at that position, the UE shall read the scheduling information for this system information block.

The UE shall act upon all received information elements as specified in subclause 8.6 unless specified otherwise in the following subclauses.

## 8.1.1.6.1 System Information Block type 1

The UE should store all relevant IEs included in this system information block if the UE is operating in "GSM-MAP mode" and the IE "PLMN type" in the Master Information Block has the value "GSM-MAP" or "GSM-MAP and ANSI-41". The UE shall also:

- 1> check that the cell, according to information included in IE "CN common GSM-MAP NAS system information", is suitable [4]:
- 1> if in connected mode:
  - 2> not forward the content of the IE "CN common GSM-MAP NAS system information" to upper layers.
- 1> if in idle mode:
  - 2> forward the content of the IE "CN common GSM-MAP NAS system information" to upper layers.
- 1> for the IE "CN domain system information list":
  - 2> for each IE "CN domain system information" that is present:
    - 3> check that the cell, according to information included in IE "CN domain specific NAS system information", is suitable [4];
    - 3> if in connected mode:
      - 4> not forward the content of the IE "CN domain specific NAS system information" to upper layers.
    - 3> if in idle mode:
      - 4> forward the content of the IE "CN domain specific NAS system information" and the IE "CN domain identity" to upper layers;
      - 4> use the IE "CN domain specific DRX cycle length coefficient" to calculate frame number for the Paging Occasions as specified in [4];
      - 4> store the value of the IE "CN domain specific DRX cycle length coefficient" for use in connected mode.
  - 2> if an IE "CN domain system information" is not present for a particular CN domain:
    - 3> if in idle mode:
      - 4> indicate to upper layers that no CN system information is available for that CN domain.
- 1> if the UE has not yet entered UTRA RRC connected mode:
  - 2> store the values of the IE "UE Timers and constants in connected mode" in the variable TIMERS\_AND\_CONSTANTS.
- 1> use the values stored in the variable TIMERS\_AND\_CONSTANTS for the relevant timers and constants.

#### 8.1.1.6.2 System Information Block type 2

If in connected mode the UE should store all relevant IEs included in this system information block. The UE shall:

1> if in state URA\_PCH, start to perform URA updates using the information in the IE "URA identity".

If in idle mode, the UE shall not use the values of the IEs in this system information block.

### 8.1.1.6.3 System Information Block type 3

The UE should store all relevant IEs included in this system information block. The UE shall:

- 1> if in connected mode, and System Information Block 4 is indicated as used in the cell:
  - 2> read and act on information sent in that block.
- 1> if IE "Deferred measurement control UTRAN support" is present:
  - 2> set variable DEFERRED MEASUREMENT STATUS to TRUE.
- 1> else:
  - 2> set variable DEFERRED\_MEASUREMENT\_STATUS to FALSE.

With respect to Domain Specific Access Control, the UE shall:

- 1> if the IE "Multiple PLMN List" is not included in the Master Information Block:
  - 2> apply the domain specific access restrictions as indicated by the IE "Domain Specific Access Restriction Parameters For PLMN Of MIB".

#### 1> else:

- 2> if the PLMN specified by the IE "PLMN Identity" of the Master Information Block is chosen by the UE:
  - 3> apply the domain specific access restrictions as indicated by the IE "Domain Specific Access Restriction Parameters For PLMN Of MIB".
- 2> else, if N-th (N=1..5) PLMN in the IE "Multiple PLMNs" contained in the IE "Multiple PLMN List" is chosen by the UE:
  - 3> if the IE "Domain Specific Access Restriction List" of the IE "Domain Specific Access Restriction For Shared Network" is indicated:
    - 4> if the IE "Domain Specific Access Restriction Parameters For OperatorN" is indicated:
      - 5> apply the domain specific access restrictions as indicated by the IE "Domain Specific Access Restriction Parameters For OperatorN".
  - 3> else, if the IE "Domain Specific Access Restriction Parameters For All" of the IE "Domain Specific Access Restriction For Shared Network" is indicated:
    - 4> apply the domain specific access restrictions as indicated by the IE "Domain Specific Access Restriction Parameters For All".

The UE shall apply the following handling with respect to any Access Class Barring information:

#### 1> if in idle mode:

- 2> if the IE "Domain Specific Access Restriction Parameters For PLMN Of MIB", the IE "Domain Specific Access Restriction Parameters For OperatorN" or the IE "Domain Specific Access Restriction Parameters For All"to be applied according to the requirements above is included in System Information Block Type 3, the UE shall:
  - 3> act on the IE "Domain Specific Access Class Barred List" if indicated in the IE "CS Domain Specific Access Restriction" when initiating RRC Connection establishment to send an INITIAL DIRECT TRANSFER message to the CS domain, as specified in [4]. If "no restriction" was indicated in restriction status, the UE shall act as if no Access Class is barred in the IE "Domain Specific Access Class Barred List", and ignore the IE "Access Class Barred List" in the IE "Cell Access Restriction";
  - 3> act on the IE "Domain Specific Access Class Barred List" if indicated in the IE "PS Domain Specific Access Restriction" when initiating RRC Connection establishment to send an INITIAL DIRECT TRANSFER message to the PS domain, as specified in [4]. If "no restriction" was indicated in restriction status, the UE shall act as if no Access Class is barred in the IE "Domain Specific Access Class Barred List", and ignore the IE "Access Class Barred List" in the IE "Cell Access Restriction";
  - 3> upon transition to UTRA RRC connected, the UE shall:

- 4> store that Domain Specific Access Restriction Parameters to the variable "DSAC\_PARAM" and maintain the variable until it is cleared, the PLMN chosen by the UE is changed or the RRC connection is released;
- 4> act on the stored IE "Domain Specific Access Class Barred List" if indicated in the IE "CS Domain Specific Access Restriction" when initiating an INITIAL DIRECT TRANSFER message to the CS domain, as specified in [4];
- 4> act on the stored IE "Domain Specific Access Class Barred List" if indicated in the IE "PS Domain Specific Access Restriction" when initiating an INITIAL DIRECT TRANSFER message to the PS domain, as specified in [4];

#### 2> else:

3> act on the IE "Access Class Barred list" when initiating RRC Connection establishment as specified in [4].

### 1> if in connected mode:

- 2> else if the IE "Domain Specific Access Restriction Parameters For PLMN Of MIB", the IE "Domain Specific Access Restriction Parameters For OperatorN" or the IE "Domain Specific Access Restriction Parameters For All" to be applied according to the requirements above is included in the System Information Block Type 3.
  - 3> if the variable "DSAC\_PARAM is not set, the UE shall:
    - 4> store that Domain Specific Access Restriction Parameters to the variable "DSAC\_PARAM" and maintain the variable until it is cleared, the PLMN chosen by the UE is changed or the RRC connection is released;
    - 4> act on the stored IE "Domain Specific Access Class Barred List" if indicated in the IE "CS Domain Specific Access Restriction" when initiating an INITIAL DIRECT TRANSFER message to the CS, as specified in [4];
    - 4> act on the stored IE "Domain Specific Access Class Barred List" if indicated in the IE "PS Domain Specific Access Restriction" when initiating an INITIAL DIRECT TRANSFER message to the PS domain, as specified in [4].
  - 3> else (the access class barring information is stored) UE shall:
    - 4> update the variable "DSAC\_PARAM" with that Domain Specific Access Restriction Parameters;
    - 4> act on the updated IE "Domain Specific Access Class Barred List" if indicated in the IE "CS Domain Specific Access Restriction" when initiating an INITIAL DIRECT TRANSFER message to the CS domain, as specified in [4];
    - 4> act on the updated IE "Domain Specific Access Class Barred List" if indicated in the IE "PS Domain Specific Access Restriction" when initiating an INITIAL DIRECT TRANSFER message to the PS domain, as specified in [4].

#### 2> else:

- 3> if the variable "DSAC\_PARAM" is set, the UE shall:
  - 4> clear the variable "DSAC PARAM";
  - 4> act as if no Access Class is barred.

### If the IE "MBSFN only service" is set to TRUE the UE shall:

- 1> consider this cell to operate in MBSFN mode;
- 1> for TDD consider that all slots operate in MBSFN mode;
- 1> for FDD and 3.84/7.68 Mcps TDD if the UE capabilities allow the reception of MBSFN in addition to the normal UE operation the UE may receive MBMS services from this cell in accordance with requirements for

selection of a cell providing only MBSFN as specified in [4]. For 1.28 Mcps TDD, if the UE capabilities allow the reception of MBSFN in addition to the normal UE operation the UE may get synchronized to the MBSFN cluster as specified in [4].

### 8.1.1.6.4 System Information Block type 4

If in connected mode, the UE should store all relevant IEs included in this system information block. The UE shall:

- 1> if in connected mode:
  - 2> read and act on information sent in this block:
  - 2> read the System Information Block Type 3 for any Access Class Barring information and act on that information as described in subclause 8.1.1.6.3.

If in idle mode, the UE shall not use the values of the IEs included in this system information block.

#### 8.1.1.6.5 System Information Block type 5 and 5bis

The UE should store all relevant IEs included in this system information block. The UE shall:

- 1> if the IE "Frequency band indicator" is included and if the frequency band indicated in the IE is not part of the frequency bands supported in the UE radio access capability; or
- 1> if the IE "Frequency band indicator 2" is included and if the frequency band indicated in the IE is not part of the frequency bands supported in the UE radio access capability; or
- 1> if the IE "Frequency band indicator" is included and set to "extension indicator", and the UE does not support any of the frequency bands that can be indicated by the IE "Frequency band indicator 2" (i.e., Band VIII or beyond); or
- 1> if the IE "Frequency band indicator" is not included in System Information Block type 5, the DL frequency is in between 2110MHz-2170MHz, and Band I is not part of the frequency bands supported by the UE in the UE radio access capability, or
- 1> if the IE "Frequency band indicator" is not included in System Information Block type 5, the DL frequency is in between 1805MHz-1880MHz, and Band III is not part of the frequency bands supported by the UE in the UE radio access capability:
  - 2> consider the cell to be barred according to [4]; and
  - 2> consider the barred cell as using the value "not allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE "T<sub>barred</sub>".
- 1> if the cell belongs to any frequency band equal to Band IV or greater and neither the IE "Frequency band indicator" nor the IE "Frequency band indicator 2" are included in System Information Block type 5 or in System Information Block type 5bis:
  - 2> the UE behaviour is not specified.
- 1> if in connected mode, and System Information Block type 6 is indicated as used in the cell:
  - 2> read and act on information sent in System Information Block type 6.
- 1> replace the TFS of the RACH with the one stored in the UE if any;
- 1> let the physical channel(s) of type PRACH given by the IE(s) "PRACH info" be the default in uplink for the PRACH if UE is in CELL\_FACH state;
- 1> start to receive the physical channel of type AICH using the parameters given by the IE "AICH info" (FDD only) when given allocated PRACH is used;
- 1> if the IE "Additional Dynamic Transport Format Information for CCCH" is included for the selected PRACH:
  - 2> use this transport format for transmission of the CCCH.

- 1> else:
  - 2> use the first instance of the list of transport formats as in the IE "RACH TFS" for the used RACH received in the IE "PRACH system information list" when using the CCCH.
- 1> for TDD; or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_FACH state; or
- 1> if the IE "HS-DSCH common system information" is not included:
  - 2> replace the TFS of the FACH/PCH with the one stored in the UE if any;
  - 2> select a Secondary CCPCH as specified in [4] and in subclause 8.5.19, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info" if UE is in Idle mode or in CELL\_PCH or URA\_PCH state;
  - 2> start to monitor its paging occasions on the selected PICH if UE is in Idle mode or in CELL\_PCH or URA\_PCH state;
  - 2> start to receive the selected physical channel of type Secondary CCPCH using the parameters given by the IE(s) "Secondary CCPCH info" if UE is in CELL\_FACH state;
  - 2> in 3.84 Mcps TDD and 7.68 Mcps TDD:
    - 3> use the IE "TDD open loop power control" as defined in subclause 8.5.7 when allocated PRACH is used.
  - 2> in TDD:
    - 3> if the IE "PDSCH system information" and/or the IE "PUSCH system information" is included:
      - 4> store each of the configurations given there with the associated identity given in the IE "PDSCH Identity" and/or "PUSCH Identity" respectively. For every configuration, for which the IE "SFN Time info" is included, the information shall be stored for the duration given there.
  - 2> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.
- 1> else:
  - 2> if the UE is in Idle mode:
    - 3> if variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED is set to TRUE:
      - 4> start to receive HS-DSCH according to the procedure in subclause 8.5.37.
    - 3> else:
      - 4> replace the TFS of the FACH/PCH with the one stored in the UE if any;
      - 4> select a Secondary CCPCH as specified in [4] and in subclause 8.5.19, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info";
      - 4> start to monitor its paging occasions on the selected PICH.
    - 3> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.
  - 2> if the UE is in CELL\_FACH:
    - 3> if variable H\_RNTI is set:
      - 4> start to receive HS-DSCH according to the procedure in subclause 8.5.36.
    - 3> else:
      - 4> if variable HS DSCH RECEPTION OF CCCH ENABLED is set to TRUE:

- 5> start to receive HS-DSCH according to the procedure in subclause 8.5.37.
- 2> if the UE is in CELL PCH or URA PCH state:
  - 3> for FDD, if the UE supports HS-DSCH reception in CELL\_PCH and URA\_PCH state; and
  - 3> if IE "HS-DSCH paging system information" is included:
    - 4> if this IE is not currently stored; and
    - 4> if the value of the IE "SRNC identity" in the variable U\_RNTI is not equal to the 12 MSBs of the received IE "Cell identity" in System Information Block type 3; and
    - 4> if the UE is in URA\_PCH state:
      - 5> initiate the URA update procedure as specified in subclause 8.3.1, using the cause "periodic URA update".
    - 4> start to monitor the paging occasions and PICH monitoring occasions determined according to subclauses 8.6.3.1a, 8.6.3.2 and 8.5.39 and receive PCCH on the HS-DSCH mapped on the HS-PDSCH, or DCCH and DTCH and BCCH on the HS-DSCH mapped on the HS-PDSCH and the associated HS-PDSCH selected by the UE according to the procedure in subclause 8.5.40.

#### 3> else:

- 4> replace the TFS of the FACH/PCH with the one stored in the UE if any;
- 4> select a Secondary CCPCH as specified in [4] and in subclause 8.5.19, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info";
- 4> start to monitor its paging occasions on the selected PICH;
- 4> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.

If a UE is a 12 kbps class UE according to [35] and the UE has a lower capability than required to support all transport channel configurations mapped on a specific Secondary CCPCH, the UE shall at a certain time instant still be able to decode those transport channels mapped on this Secondary CCPCH that do match the capability supported by the UE. The UE shall use the TFCI bits for that Secondary CCPCH, to distinguish a transport channel configuration that is supported by the UE from a transport channel configuration that is not supported by the UE.

In particular if the UE is a 12 kbps class UE according to [35] and it does not support the processing requirement at a given point in time for a Secondary CCPCH, it shall still be able to decode the same Secondary CCPCH when the processing requirement is consistent with the UE capability. Or if the UE does not support the number of TFs or the coding of a certain transport channel on a Secondary CCPCH, it shall still be able to decode other transport channels mapped on the same Secondary CCPCH that is consistent with what is supported by the UE.

#### The UE shall:

- 1> if the IE "Secondary CCPCH system information MBMS" is included:
  - 2> apply the Secondary CCPCH and FACH indicated by the IE "FACH carrying MCCH" for receiving MCCH.
- 1> otherwise, if the IE "Secondary CCPCH system information" includes the IE "MCCH configuration information":
  - 2> apply the Secondary CCPCH and FACH indicated by the IE "MCCH configuration information" for receiving MCCH.
- 1> for TDD, if the IE "TDD MBSFN Information" is included:
  - 2> apply the scrambling codes (as referenced by the "Cell parameters ID") to each timeslot indicated by "TDD MBSFN Information".

### 8.1.1.6.6 System Information Block type 6

If in connected mode, the UE should store all relevant IEs included in this system information block. The UE shall:

- 1> if the IE "Frequency band indicator" is included:
  - 2> if the frequency band indicated in the IE is not part of the frequency bands supported in the UE radio access capability; or
  - 2> if the IE "Frequency band indicator 2" is included and if the frequency band indicated in the IE is not part of the frequency bands supported in the UE radio access capability; or
  - 2> if the IE "Frequency band indicator" is included and set to "extension indicator", and the UE does not support any of the frequency bands that can be indicated by the IE "Frequency band indicator 2" (i.e., Band VIII or beyond):
    - 3> consider the cell to be barred according to [4]; and
    - 3> consider the barred cell as using the value "not allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE "T<sub>barred</sub>".
- 1> replace the TFS of the RACH with the one stored in the UE if any;
- 1> let the physical channel(s) of type PRACH given by the IE(s) "PRACH info" be the default in uplink if UE is in CELL\_FACH state. If the IE "PRACH info" is not included, the UE shall read the corresponding IE(s) in System Information Block type 5 or System Information Block type 5bis and use that information to configure the PRACH;
- 1> start to receive the physical channel of type AICH using the parameters given by the IE "AICH info" when associated PRACH is used. If the IE "AICH info" is not included, the UE shall read the corresponding IE in System Information Block type 5 or System Information Block type 5bis and use that information (FDD only);
- 1> if the IE "Additional Dynamic Transport Format Information for CCCH" is included for the selected PRACH:
  - 2> use this transport format for transmission of the CCCH (FDD only).
- 1> else:
  - 2> use the first instance of the list of transport formats as in the IE "RACH TFS" for the used RACH received in the IE "PRACH system information list" when using the CCCH (FDD only).
- 1> for TDD: or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_FACH state; or
- 1> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 2> replace the TFS of the FACH/PCH with the one stored in the UE if any;
  - 2> select a Secondary CCPCH as specified in [4] and in subclause 8.5.19, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info" if the UE is in CELL\_PCH or URA\_PCH state. If the IE "PICH info" is not included, the UE shall read the corresponding IE in System Information Block type 5 or System Information Block type 5bis and use that information;
  - 2> start to monitor its paging occasions on the selected PICH if the UE is in CELL\_PCH or URA\_PCH state;
  - 2> start to receive the selected physical channel of type Secondary CCPCH using the parameters given by the IE(s) "Secondary CCPCH info" if the UE is in CELL\_FACH state. If the IE "Secondary CCPCH info" is not included, the UE shall read the corresponding IE(s) in System Information Block type 5 or System Information Block type 5 bis and use that information;
  - 2> in 3.84 Mcps TDD and 7.68 Mcps TDD: use the IE "TDD open loop power control" as defined in subclause 8.5.7;

- 2> in TDD: if the IE "PDSCH system information" and/or the IE "PUSCH system information" is included, store each of the configurations given there with the associated identity given in the IE "PDSCH Identity" and/or "PUSCH Identity" respectively. For every configuration, for which the IE "SFN Time info" is included, the information shall be stored for the duration given there;
- 2> take the corresponding actions as described in subclause 8.5.37a.

#### 1> else:

- 2> if the UE is in CELL\_FACH:
  - 3> read and use the IE "HS-DSCH common system information" in System Information Block type 5 or System Information Block type 5bis;
  - 3> if variable H\_RNTI is set:
    - 4> start to receive HS-DSCH according to the procedure in subclause 8.5.36.
  - 3> else:
    - 4> if variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED is set to TRUE:
      - 5> start to receive HS-DSCH according to the procedure in subclause 8.5.37.
- 2> if the UE is in CELL\_PCH or URA\_PCH state:
  - 3> for FDD, if the UE supports HS-DSCH reception in CELL\_PCH and URA\_PCH state; and
  - 3> if IE "HS-DSCH paging system information" is included in System Information Block type 5 or System Information Block type 5bis:
    - 4> read and use the IE "HS-DSCH paging system information" in System Information Block type 5 or System Information Block type 5bis;
    - 4> start to monitor the paging occasions and PICH monitoring occasions determined according to subclauses 8.6.3.1a, 8.6.3.2 and 8.5.39 and receive PCCH or DCCH and DTCH according to the procedure in subclause 8.5.40.

### 3> else:

- 4> replace the TFS of the FACH/PCH with the one stored in the UE if any;
- 4> select a Secondary CCPCH as specified in [4] and in subclause 8.5.19, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info". If the IE "PICH info" is not included, the UE shall read the corresponding IE in System Information Block type 5 or System Information Block type 5 bis and use that information;
- 4> start to monitor its paging occasions on the selected PICH;
- 4> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.

If in idle mode, the UE shall not use the values of the IEs in this system information block.

If a UE is a 12 kbps class UE according to [35] and the UE has a lower capability than required to support all transport channel configurations mapped on a specific Secondary CCPCH, the UE shall at a certain time instant still be able to decode those transport channels mapped on this Secondary CCPCH that do match the capability supported by the UE. The UE shall use the TFCI bits for that Secondary CCPCH, to distinguish a transport channel configuration that is supported by the UE from a transport channel configuration that is not supported by the UE.

In particular if the UE is a 12 kbps class UE according to [35] and it does not support the processing requirement at a given point in time for a Secondary CCPCH, it shall still be able to decode the same Secondary CCPCH when the processing requirement is consistent with the UE capability. Or if the UE does not support the number of TFs or the coding of a certain transport channel on a Secondary CCPCH, it shall still be able to decode other transport channels mapped on the same Secondary CCPCH that is consistent with what is supported by the UE.

### 8.1.1.6.7 System Information Block type 7

The UE should store all relevant IEs included in this system information block.

8.1.1.6.8 Void

8.1.1.6.9 Void

8.1.1.6.10 Void

### 8.1.1.6.11 System Information Block type 11

If the cell is not operating in MBSFN mode according to subclause 8.1.1.6.3 the UE should store all relevant IEs included in this system information block. If the cell is not operating in MBSFN mode according to subclause 8.1.1.6.3 the UE shall:

- 1> if in idle mode:
  - 2> clear the variable MEASUREMENT\_IDENTITY.
- 1> if IE "FACH measurement occasion info" is included:
  - 2> act as specified in subclause 8.6.7.
- 1> else:
  - 2> may perform inter-frequency/inter-RAT measurements or inter-frequency/inter-RAT cell re-selection evaluation, if the UE capabilities permit such measurements while simultaneously receiving the S-CCPCH of the serving cell.
- 1> clear the variable CELL INFO LIST;
- 1> act upon the received IE "Intra-frequency cell info list"/"Inter-frequency cell info list"/"Inter-RAT cell info list" as described in subclause 8.6.7.3;
- 1> if the IE "Inter-frequency RACH reporting information" is included in the system information block:
  - 2> read the IE and use that information for the inter-frequency measurements as specified in subclause 8.5.23.
- 1> if in idle mode; or
- 1> if in connected mode and if System Information Block type 12 is not broadcast in the cell:
  - 2> if no intra-frequency measurement stored in the variable MEASUREMENT\_IDENTITY was set up or modified through a MEASUREMENT CONTROL message:
    - 3> if included, store the IE "Intra-frequency reporting quantity" and the IE "Intra-frequency measurement reporting criteria" or "Periodical reporting criteria" in order to activate reporting when state CELL\_DCH is entered in the variable MEASUREMENT\_IDENTITY. The IE "Cells for measurement" is absent for this measurement. The IE "Measurement Validity" is absent for this measurement after a state transition to CELL\_DCH;
- 1> if in connected mode and if System Information Block type 12 is not broadcast in the cell:
  - 2> read the IE "Traffic volume measurement information";
  - 2> if no traffic volume measurement with the measurement identity indicated in the IE "Traffic volume measurement system information" was set up or modified through a MEASUREMENT CONTROL message:

- 3> update the variable MEASUREMENT\_IDENTITY with the measurement information received in that IE.
- 1> if the IE "Cell selection and reselection info" is not included for a new neighbouring cell in the IE "intrafrequency cell info list", the IE "inter-frequency cell info list" or the IE "inter-RAT cell info list" in System Information Block type 11:
  - 2> use the default values specified for the IE "Cell selection and reselection info" for that cell except for the IE "HCS neighbouring cell information".
- 1> if the IE "Use of HCS" is set to "used", indicating that HCS is used, do the following:
  - 2> if IE "HCS neighbouring cell information" is not included for the first new cell in the IE "Intra-frequency cell info list", the IE "Inter-frequency cell info list" or the IE "Inter-RAT cell info list" in System Information Block type 11:
    - 3> use the default values specified for the IE "HCS neighbouring cell information" for that cell.
  - 2> if IE "HCS neighbouring cell information" is not included for any other new cell in the IE "Intra-frequency cell info list", the IE "Inter-frequency cell info list" or the IE "Inter-RAT cell info list" in System Information Block type 11:
    - 3> for that cell use the same parameter values as used for the preceding cell in the same cell info list in System Information Block type 11.
- 1> if the value of the IE "Cell selection and reselection quality measure" is different from the value of the IE "Cell selection and reselection quality measure" obtained from System Information Block type 3 or System Information Block type 4:
  - 2> use the value of the IE from this System Information Block and ignore the value obtained from System Information Block type 3 or System Information Block type 4.
- 1> if in connected mode, and System Information Block type 12 is indicated as used in the cell:
  - 2> read and act on information sent in System Information Block type 12 as indicated in subclause 8.1.1.6.12.
- For 1.28 Mcps TDD if the cell is operating in MBSFN only mode according to subclause 8.1.1.6.3 the UE shall:
  - 1> store the frequencies and their corresponding "cell parameter ID" indicated in the IE "MBSFN LCR TDD frequency list" included in the IE "MBSFN frequency list".

If the cell is operating in MBSFN mode according to subclause 8.1.1.6.3 the UE may:

- 1> for FDD and 3.84/7.68 Mcps TDD consider the cells indicated in the IE "Intra-frequency cell info list" in the IE "Intra-frequency measurement system information" as candidates for the selection of the MBSFN cluster;
- 1> for 1.28 Mcps TDD consider there exist MBSFN clusters deployed with the frequencies and their corresponding "cell parameter ID" stored.

For 1.28 Mcps TDD if the cell is not operating in MBSFN only mode but associated with one or more MBSFN clusters the UE shall:

- 1> store the frequencies and their corresponding "cell parameter ID" indicated in the IE "MBSFN LCR TDD frequency list" included in the IE "MBSFN frequency list";
- 1> consider there exist MBSFN clusters deployed with the frequencies and their corresponding "cell parameter ID" stored;
- 1> search an MBSFN cluster in MBSFN only mode with its frequency and corresponding "cell parameter ID" for monitoring the MBMS services delivered in dedicated MBSFN frequency layer.
- NOTE: The IE "Intra-frequency cell info list" may not include information about all neighbouring MBSFN clusters

## 8.1.1.6.11a System Information Block type 11bis

The UE should store all relevant IEs included in this system information block. The UE shall:

- 1> after reception of SIB 11 act upon the received IEs "Intra-frequency cell info list", "Inter-frequency cell info list" and "Inter-RAT cell info list" as described in subclause 8.6.7.3;
- 1> if the IE "Cell selection and reselection info" is not included for a new neighbouring cell in the IEs "New Intrafrequency cells", "New Inter-frequency cells" or "New Inter-RAT cells" in System Information Block type 11bis:
  - 2> use the default values specified for the IE "Cell selection and reselection info" for that cell except for the IE "HCS neighbouring cell information".
- 1> if the IE "Use of HCS" is set to "used", indicating that HCS is used, do the following:
  - 2> if IE "HCS neighbouring cell information" is not included for the first new cell in the IEs "New Intrafrequency cells", "New Inter-frequency cells" or "New Inter-RAT cells" in System Information Block type 11bis:
    - 3> use the default values specified for the IE "HCS neighbouring cell information" for that cell.
  - 2> if IE "HCS neighbouring cell information" is not included for any other new cell in the IEs "New Intrafrequency cells", "New Inter-frequency cells" or "New Inter-RAT cells" in System Information Block type 11bis:
    - 3> for that cell use the same parameter values as used for the preceding cell in the same cell info list in System Information Block type 11bis.

## 8.1.1.6.12 System Information Block type 12

If in connected mode, the UE should store all relevant IEs included in this system information block. The UE shall:

- 1> after reception of System Information Block type 11; and
- 1> after reception of System Information Block type 11bis, if broadcast in the cell:
  - 2> update the variable MEASUREMENT\_IDENTITY with the measurement information in the received IEs unless specified otherwise.
- 1> if IE "FACH measurement occasion info" is included:
  - 2> act as specified in subclause 8.6.7.
- 1> else:
  - 2> may perform inter-frequency/inter-RAT measurements or inter-frequency/inter-RAT cell re-selection evaluation, if the UE capabilities permit such measurements while simultaneously receiving the S-CCPCH of the serving cell.
- 1> act upon the received IE "Intra-frequency cell info list"/"Inter-frequency cell info list"/"Inter-RAT cell info list" as described in subclause 8.6.7.3;
- 1> if any of the IEs "Intra-frequency measurement quantity", "Intra-frequency reporting quantity for RACH reporting", "Maximum number of reported cells on RACH" or "Reporting information for state CELL\_DCH" are not included in the system information block:
  - 2> read the corresponding IE(s) in system information block type 11 and use that information for the intrafrequency measurement.
- 1> if the IE "Inter-frequency RACH reporting information" is included in this system information block or in System Information Block type 11:
  - 2> if the IE is not included in the system information block, read the corresponding IE(s) in System Information Block type 11;

- 2> use the received information for the inter-frequency measurements as specified in subclause 8.5.23.
- 1> if included in this system information block or in System Information Block type 11:
  - 2> if no intra-frequency measurement in the variable MEASUREMENT\_IDENTITY was set up or modified through a MEASUREMENT CONTROL message:
    - 3> store the IE "Intra-frequency reporting quantity" and the IE "Intra-frequency measurement reporting criteria" or "Periodical reporting criteria" in order to activate reporting when state CELL\_DCH is entered in the variable MEASUREMENT\_IDENTITY. The IE "Cells for measurement" is absent for this measurement. The IE "Measurement Validity" is absent for this measurement after a state transition to CELL DCH;
- 1> if the IE "Traffic volume measurement system information" is not included in this system information block:
  - 2> read the corresponding IE in System Information Block type 11.
- 1> if the IE "Traffic volume measurement system information" was received either in this system information block or in System Information Block type 11:
  - 2> if no traffic volume measurement with the measurement identity indicated in the IE "Traffic volume measurement system information" was set up or modified through a MEASUREMENT CONTROL message:
    - 3> update the variable MEASUREMENT\_IDENTITY with the measurement information received in that IE

#### 1> if in CELL FACH state:

- 2> start or continue the traffic volume measurements stored in the variable MEASUREMENT\_IDENTITY that are valid in CELL FACH state.
- 1> if the IE "Cell selection and reselection info" is not included for a new neighbouring cell in the IE "Intrafrequency cell info list", the IE "Inter-frequency cell info list" or the IE "Inter-RAT cell info list" in System Information Block type 12:
  - 2> use the default values specified for the IE "Cell selection and reselection info" for that cell except for the IE "HCS neighbouring cell information".
- 1> if the IE "Use of HCS" is set to "used", indicating that HCS is used, do the following:
  - 2> if IE "HCS neighbouring cell information" is not included for the first new cell in the IE "Intra-frequency cell info list", the IE "Inter-frequency cell info list" or the IE "Inter-RAT cell info list" in System Information Block type 12:
    - 3> use the default values specified for the IE "HCS neighbouring cell information" for that cell.
  - 2> if IE "HCS neighbouring cell information" is not included for any other new cell in the IE "Intra-frequency cell info list", the IE "Inter-frequency cell info list" or the IE "Inter-RAT cell info list" in System Information Block type 12:
    - 3> for that cell use the same parameter values as used for the preceding cell in the same cell info list in System Information Block type 12.
- 1> if the value of the IE "Cell selection and reselection quality measure" is different from the value of the IE "Cell selection and reselection quality measure" obtained from System Information Block type 3 or System Information Block type 4:
  - 2> use the value of the IE from this System Information Block and ignore the value obtained from System Information Block type 3 or System Information Block type 4.

If in idle mode, the UE shall not use the values of the IEs in this system information block.

## 8.1.1.6.13 System Information Block type 13

If in idle or connected mode, the UE should store all relevant IEs included in this system information block except for the IEs "CN domain specific DRX cycle length coefficient", "UE timers and constants in idle mode" and "Capability update requirement" which shall be stored only in the idle mode case. The UE shall read System Information Block type 13 and the associated System Information Block types 13.1, 13.2, 13.3 and 13.4 only when the UE is operating in "ANSI-41 mode" and the IE "PLMN type" in the Master Information Block has the value "ANSI-41" or "GSM-MAP and ANSI-41". The UE shall also:

- 1> forward the content of the IE "CN domain specific NAS system information" to the non-access stratum entity indicated by the IE "CN domain identity";
- 1> use the IE "CN domain specific DRX cycle length coefficient" to calculate frame number for the Paging Occasions and Page indicator as specified in [4].

Refer to TIA/EIA/IS-2000.5-A for actions on information contained in System Information Block types 13.1, 13.2, 13.3 and 13.4.

## 8.1.1.6.14 System Information Block type 14

This system information block type is used only in 3.84 Mcps TDD and 7.68 Mcps TDD.

The UE should store all relevant IEs included in this system information block. The UE shall:

1> use the IE "UL Timeslot Interference" to calculate PRACH, DPCH and PUSCH transmit power for TDD uplink open loop power control as defined in subclause 8.5.7.

#### 8.1.1.6.15 System Information Block type 15

If the UE is in idle or connected mode, and supports GPS location services it should store all relevant IEs included in this system information block. The UE shall:

1> if the IE "GPS Data ciphering info" is included:

1> act as specified in the subclause 8.6.7.19.4.- act upon the received IE "Reference position" as specified in subclause 8.6.7.19.3.8;

- 1> act upon the received IE "GPS reference time" as specified in subclause 8.6.7.19.3.7;
- 1> if IE "Satellite information" is included:
  - 2> act upon this list of bad satellites as specified in subclause 8.6.7.19.3.6.

NOTE: For efficiency purposes, the UTRAN should broadcast System Information Block type 15 if it is broadcasting System Information Block type 15.2.

## 8.1.1.6.15.0 System Information Block type 15bis

If the UE is in idle or connected mode, and supports GANSS location services it should store all relevant IEs included in this system information block. The UE shall:

- 1> act upon the received IE "Reference position" as specified in subclause 8.6.7.19.6.8;
- 1> act upon the received IE "GANSS reference time" as specified in subclause 8.6.7.19.6.7;
- 1> if IE "GANSS ionospheric model" is included:
  - 2> act upon the received IE "GANSS ionospheric model" as specified in subclause 8.6.7.19.6.5.

## 8.1.1.6.15.1 System Information Block type 15.1

The UE should store all the relevant IEs included in this system information block in variable UE\_POSITIONING\_GPS\_DATA. The UE shall:

- 1> act on "DGPS information" in the IE "DGPS Corrections" in a similar manner as specified in [13] except that the scale factors for PRC and RRC are different;
- 1> act upon the received IE " UE Positioning GPS DGPS corrections" as specified in subclause 8.6.7.19.3.3.

In this version of the specification, the UE shall:

1> ignore the following IEs: "Delta PRC2", "Delta RRC2", "Delta PRC3" and "Delta RRC3".

#### 8.1.1.6.15.1a System Information Block type 15.1bis

This SIB has one occurrence for each GANSS supported. To identify the different GANSSs, the scheduling information for System Information Block type 15.1bis is associated with IE "GANSS ID". The UE should store all the relevant IEs included in this system information block in variable UE\_POSITIONING\_GANSS\_DATA. The UE shall:

- 1> act on "DGANSS information" in the IE "DGANSS Corrections" in a similar manner as specified in [13] except that the scale factors for PRC and RRC are different;
- 1> act upon the received IE "UE Positioning DGANSS corrections" as specified in subclause 8.6.7.19.6.3.

#### 8.1.1.6.15.2 System Information Block type 15.2

For System Information Block type 15.2 multiple occurrences may be used; one occurrence for one satellite. To identify the different occurrences, the scheduling information for System Information Block type 15.2 includes IE "SIB occurrence identity and value tag". The UE should store all the relevant IEs included in this system information block in variable UE\_POSITIONING\_GPS\_DATA. The UE shall:

- 1> compare for each occurrence the value tag of the stored occurrence, if any, with the occurrence value tag included in the IE "SIB occurrence identity and value tag" for the occurrence of the System Information Block with the same occurrence identity;
- 1> in case the UE has no SIB occurrence stored with the same identity or in case the occurrence value tag is different:
  - 2> store the occurrence information together with its identity and value tag for later use.
- 1> in case an occurrence with the same identity but different value tag was stored:
  - 2> overwrite this one with the new occurrence read via system information for later use.
- 1> interpret IE "Transmission TOW" as a very coarse estimate of the current time, i.e., the approximate GPS time-of-week when the message is broadcast;
- 1> interpret IE "SatID" as the satellite ID of the data from which this message was obtained;
- 1> act upon the received IEs "Sat ID" and "GPS Ephemeris and Clock Corrections Parameter" as specified in subclause 8.6.7.19.3.4.

The IE "Transmission TOW" may be different each time a particular SIB occurrence is transmitted. The UTRAN should not increment the value tag of the SIB occurrence if the IE "Transmission TOW" is the only IE that is changed.

The UE may not need to receive all occurrences before it can use the information from any one occurrence.

#### 8.1.1.6.15.2a System Information Block type 15.2bis

For System Information Block type 15.2bis multiple occurrences may be used; one occurrence for one satellite. To identify for which GANSS the occurrence is related to, the scheduling information for System Information Block type 15.2bis is associated with IE "GANSS ID". To identify the different occurrences within each GANSS, the scheduling information for System Information Block type 15.2bis includes IE "SIB occurrence identity and value tag". The UE should store all the relevant IEs included in this system information block in variable UE POSITIONING GANSS DATA. The UE shall:

1> compare for each occurrence the value tag of the stored occurrence, if any, with the occurrence value tag included in the IE "SIB occurrence identity and value tag" for the occurrence of the System Information Block with the same occurrence identity;

- 1> in case the UE has no SIB occurrence stored with the same identity or in case the occurrence value tag is different:
  - 2> store the occurrence information together with its identity and value tag for later use.
- 1> in case an occurrence with the same identity but different value tag was stored:
  - 2> overwrite this one with the new occurrence read via system information for later use.
- 1> act upon the received IEs "GANSS Navigation Model" as specified in subclause 8.6.7.19.6.4.

The UE may not need to receive all occurrences before it can use the information from any one occurrence.

#### 8.1.1.6.15.3 System Information Block type 15.3

For System Information Block type 15.3 multiple occurrences may be used; one occurrence for each set of satellite data. To identify the different occurrences, the scheduling information for System Information Block type 15.3 includes IE "SIB occurrence identity and value tag". The UE should store all the relevant IEs included in this system information block in variable UE\_POSITIONING\_GPS\_DATA. The UE shall:

- 1> compare for each occurrence the value tag of the stored occurrence, if any, with the occurrence value tag included in the IE "SIB occurrence identity and value tag" for the occurrence of the System Information Block with the same occurrence identity;
- 1> in case the UE has no SIB occurrence stored with the same identity or in case the occurrence value tag is different:
  - 2> store the occurrence information together with its identity and value tag for later use.
- 1> in case an occurrence with the same identity but different value tag was stored:
  - 2> overwrite this one with the new occurrence read via system information for later use.
- 1> interpret IE "Transmission TOW" as a very coarse estimate of the current time, i.e., the approximate GPS time-of-week when the message is broadcast;
- 1> if the IE "GPS Almanac and Satellite Health" is included:
  - 2> interpret IE "SatMask" as the satellites that contain the pages being broadcast in this message;
  - 2> interpret IE "LSB TOW" as the least significant 8 bits of the TOW ([12]);
  - 2> act upon the received IE "GPS Almanac and Satellite Health" as specified in subclause 8.6.7.19.3.2.
- 1> if the IE "GPS ionospheric model" is included:
  - 2> act upon the received IE "GPS ionospheric model" as specified in subclause 8.6.7.19.3.5.
- 1> if the IE "GPS UTC model" is included:
  - 2> act upon the received IE "GPS UTC model" as specified in subclause 8.6.7.19.3.9.

The IE "Transmission TOW" may be different each time a particular SIB occurrence is transmitted. The UTRAN should not increment the value tag of the SIB occurrence if the IE "Transmission TOW" is the only IE that is changed. One SIB occurrence value tag is assigned to the table of subclause 10.2.48.8.18.3.

The UE may not need to receive all occurrences before it can use the information for any one occurrence.

## 8.1.1.6.15.3a System Information Block type 15.3bis

For System Information Block type 15.3bis multiple occurrences may be used; one occurrence for each set of satellite data. To identify for which GANSS the occurrence is related to, the scheduling information for System Information Block type 15.3bis is associated with IE "GANSS ID". To identify the different occurrences within each GANSS, the scheduling information for System Information Block type 15.3bis includes IE "SIB occurrence identity and value tag". The UE should store all the relevant IEs included in this system information block in variable UE\_POSITIONING\_GANSS\_DATA. The UE shall:

- 1> compare for each occurrence the value tag of the stored occurrence, if any, with the occurrence value tag included in the IE "SIB occurrence identity and value tag" for the occurrence of the System Information Block with the same occurrence identity;
- 1> in case the UE has no SIB occurrence stored with the same identity or in case the occurrence value tag is different:
  - 2> store the occurrence information together with its identity and value tag for later use.
- 1> in case an occurrence with the same identity but different value tag was stored:
  - 2> overwrite this one with the new occurrence read via system information for later use.
- 1> if the IE "GANSS Almanac " is included:
  - 2> act upon the received IE "GANSS Almanac" as specified in subclause 8.6.7.19.7.2.
- 1> if the IE "GANSS time model" is included:
  - 2> act upon the received IE "GANSS time model" as specified in subclause 8.6.7.19.6.9.
- 1> if the IE "GANSS UTC model" is included:
  - 2> act upon the received IE "GANSS UTC model" as specified in subclause 8.6.7.19.6.10.

The UE may not need to receive all occurrences before it can use the information for any one occurrence.

#### 8.1.1.6.15.4 System Information Block type 15.4

If the UE is in idle mode or connected mode, the UE shall:

- 1> if the IE "OTDOA Data ciphering info" is included:
  - 2> act as specified in subclause 8.6.7.19.4.

If the UE is in connected mode, the UE shall:

1> act as specified in subclause 8.6.7.19.2.

## 8.1.1.6.15.5 System Information Block type 15.5

If the UE is in idle or connected mode, the UE shall:

- 1> if the UE supports UE-based OTDOA positioning:
  - 2> act as specified in subclause 8.6.7.19.2a.

## 8.1.1.6.15.6 System Information Block type 15.6

The UE should store all the relevant IEs included in this system information block in variable UE POSITIONING GANSS DATA. The UE shall:

- 1> use IE "GANSS TOD" as a reference time for the data in IE "GANSS reference measurement information";
- 1> act upon the received IE "GANSS reference measurement information" as specified in subclause 8.6.7.19.6.1.

## 8.1.1.6.15.7 System Information Block type 15.7

The UE should store all the relevant IEs included in this system information block in variable UE\_POSITIONING\_GANSS\_DATA. The UE shall:

1> act upon the received IE "GANSS data bit assistance" as specified in subclause 8.6.7.19.6.11.

#### 8.1.1.6.15.8 System Information Block type 15.8

The UE should store all the relevant IEs included in this system information block in variable UE\_POSITIONING\_GANSS\_DATA. The UE shall:

- 1> if the IE "GANSS Data ciphering info" is included:
  - 2> act as specified in the subclause 8.6.7.19.4.
- 1> if the IE "GANSS real-time integrity" is included:
  - 2> act upon the received IE " GANSS real-time integrity" as specified in subclause 8.6.7.19.6.6.

#### 8.1.1.6.16 System Information Block type 16

If the IE "Uplink DPCH info Pre" is included in the PhyCH Information Elements for a predefined configuration the UE shall:

- 1> for FDD:
  - 2> if the IE "Number of TPC bits" is not included:
    - 3> use 2 TPC bits in the Uplink DPCH.
  - 2> else:
    - 3> if F-DPCH is not configured then the UE behaviour is unspecified.

For System Information Block type 16 multiple occurrences may be used; one occurrence for each predefined configuration. To identify the different predefined configurations, the scheduling information for System Information Block type 16 includes IE "Predefined configuration identity and value tag".

The UE should store all relevant IEs included in this system information block. The UE shall:

- 1> compare for each predefined configuration the value tag of the stored predefined configuration with the preconfiguration value tag included in the IE "Predefined configuration identity and value tag" for the occurrence of the System Information Block with the same predefined configuration identity;
- 1> in case the UE has no predefined configuration stored with the same identity:
  - 2> store the predefined configuration information together with its identity and value tag for later use e.g. during handover to UTRAN.
- 1> in case a predefined configuration with the same identity but different value tag was stored:
  - 2> overwrite this one with the new configuration read via system information for later use e.g. during handover to UTRAN.

The above handling applies regardless of whether the previously stored predefined configuration information has been obtained via UTRA or via another RAT.

The UE is not required to complete reading of all occurrences of System Information Block type 16 before initiating RRC connection establishment.

The UE is not required to store more than maxPredefConfig preconfigurations even in the case of multiple equivalent PLMNs.

#### 8.1.1.6.17 System Information Block type 17

This system information block type is used only for TDD.

If in connected mode, the UE should store all relevant IEs included in this system information block. The UE shall:

1> if the IE "PDSCH system information" and/or the IE "PUSCH system information" is included, store each of the configurations given there with the associated identity given in the IE "PDSCH Identity" and/or "PUSCH

Identity" respectively. This information shall become invalid after the time specified by the repetition period (SIB\_REP) for this system information block.

If in idle mode, the UE shall not use the values of the IEs in this system information block.

#### 8.1.1.6.18 System Information Block type 18

If the System Information Block type 18 is present, a UE shall obtain knowledge of the PLMN identity of the neighbour cells to be considered for cell reselection, and shall behave as specified in this subclause and in subclause 8.5.14a.

The UE should store all the relevant IEs included in this system information block.

A UE in idle mode shall act according to the following rules:

- 1> if System Information Block type 11bis is scheduled on BCH; and the IE "Idle mode PLMN identities for SIB 11bis" is present:
  - 2> any PLMN list of a given type (IEs "PLMNs of intra-frequency cells list", "PLMNs of inter-frequency cells list", "PLMNs of inter-RAT cell lists") included in the IE "Idle mode PLMN identities for SIB 11bis" is paired with the list of cells of the same type derived from System Information Block type 11 and System Information Block type 11bis.

#### 1> else:

- 2> any PLMN list of a given type (IEs "PLMNs of intra-frequency cells list", "PLMNs of inter-frequency cells list", "PLMNs of inter-RAT cell lists") included in the IE "Idle mode PLMN identities" is paired with the list of cells of the same type derived from System Information Block type 11 and System Information Block type 11bis if scheduled on BCH.
- 1> the PLMN identity located at a given rank in the PLMN list is that of the cell with the same ranking in the paired list of cells, the cells being considered in the increasing order of their associated identities ("Intra-frequency cell id", "Inter-frequency cell id", "Inter-RAT cell id");
- 1> if no identity is indicated for the first PLMN in a list, the UE shall assume that the neighbouring cell broadcasts the same PLMN configuration (i.e. IE "PLMN Identity" and IE "Multiple PLMN List") as the current cell;
- 1> if no identity is indicated for another entry in the list, the UE shall assume that the neighbouring cell broadcasts the same PLMN configuration (i.e. IE "PLMN Identity" and IE "Multiple PLMN List") as the previous cell in the list;
- 1> if the number of identities in a PLMN list exceeds the number of neighbour cells in the paired list (if any), the extra PLMN identities are considered as unnecessary and ignored;
- 1> if the number of identities in a PLMN list (if any) is lower than the number of neighbour cells in the paired list, the missing PLMN identities are replaced by the PLMN configuration for the last cell in the list.

A UE in connected mode shall act in the same manner as a UE in idle mode with the following modifications:

- 1> if System Information Block type 11bis is scheduled on BCH:
  - 2> the PLMN lists to be considered are the ones included, when present, in the IE "Connected mode PLMN identities for SIB 11bis";
  - 2> otherwise, the UE shall use, in place of any missing list, when present, the corresponding one in the IE "Idle mode PLMN identities for SIB11bis";
  - 2> otherwise, the UE shall use, in place of any missing list, when present, the corresponding one in the IE "Connected mode PLMN identities";
  - 2> otherwise, the UE shall use, in place of any missing list, the corresponding one in the IE "Idle mode PLMN identities".

#### 1> else:

2> the PLMN lists to be considered are the ones included, when present, in the IE "Connected mode PLMN identities";

- 2> otherwise, the UE shall use, in place of any missing list, the corresponding one in the IE "Idle mode PLMN identities".
- 1> the paired lists of cells are the ones derived from System Information Block type 11, and System Information Block type 11bis if scheduled on BCH, and System Information Block type 12 if present.

## 8.1.1.7 Modification of system information

For System Information Block type 15.2, 15.3 and 16 that may have multiple occurrences, the UE shall handle each occurrence independently as specified in the previous; that is each occurrence is handled as a separate system information block.

NOTE: It should be noted that for the proper operation of the BCCH Modification Information sent on a PCH or on an HS-DSCH (FDD only), the System Information should not be changed more frequently than can be accommodated by mobile stations operating at the maximum DRX cycle length supported by the UTRAN.

## 8.1.1.7.1 Modification of system information blocks using a value tag

Upon modifications of system information blocks using value tags, UTRAN should notify the new value tag for the master information block in the IE "BCCH modification info", transmitted in the following way:

- 1> to reach UEs in idle mode, and in CELL\_PCH state and URA\_PCH state with S-CCPCH assigned, the IE "BCCH modification info" is contained in a PAGING TYPE 1 message transmitted on the PCCH in all paging occasions in the cell;
- 1> to reach UEs in CELL\_PCH state and URA\_PCH state with HS-DSCH assigned and no dedicated H-RNTI assigned, the IE "BCCH modification info" is contained in a PAGING TYPE 1 message transmitted on the PCCH in all paging occasions in the cell;
- 1> to reach UEs in CELL\_FACH state or TDD UEs in CELL\_DCH with S-CCPCH assigned, the IE "BCCH modification info" is contained in a SYSTEM INFORMATION CHANGE INDICATION message transmitted on the BCCH mapped on at least one FACH on every Secondary CCPCH in the cell;
- 1> for FDD, to reach UEs in CELL\_FACH state with HS-DSCH assigned and in CELL\_PCH with HS-DSCH and dedicated H-RNTI assigned, the IE "BCCH modification info" is contained in a SYSTEM INFORMATION CHANGE INDICATION message transmitted on the BCCH mapped on the HS-PDSCH indicated with the first indexed HS-SCCH code by the BCCH specific H-RNTI.

Upon reception of a PAGING TYPE 1 message or a SYSTEM INFORMATION CHANGE INDICATION message containing the IE "BCCH modification info" containing the IE "MIB value tag" but not containing the IE "BCCH modification time", the UE shall perform actions as specified in subclause 8.1.1.7.3.

If the IE "BCCH modification time" is included the UE shall perform actions as specified in subclause 8.1.1.7.2.

#### 8.1.1.7.2 Synchronised modification of system information blocks

For modification of some system information elements, e.g. reconfiguration of the channels, it is important for the UE to know exactly when a change occurs. In such cases, the UTRAN should notify the SFN when the change will occur as well as the new value tag for the master information block in the IE "BCCH modification info" transmitted in the following way:

- 1> To reach UEs in idle mode, CELL\_PCH state and URA\_PCH state, the IE "BCCH modification info" is contained in a PAGING TYPE 1 message transmitted on the PCCH in all paging occasions in the cell;
- 1> To reach UEs in CELL\_FACH state or TDD UEs in CELL\_DCH with SCCPCH assigned, the IE "BCCH modification info" is contained in a SYSTEM INFORMATION CHANGE INDICATION message transmitted on the BCCH mapped on at least one FACH on every Secondary CCPCH in the cell;
- 1> for FDD, to reach UEs in CELL\_FACH state with HS-DSCH assigned and in CELL\_PCH with HS-DSCH and dedicated H-RNTI assigned, the IE "BCCH modification info" is contained in a SYSTEM INFORMATION CHANGE INDICATION message transmitted on the BCCH mapped on the HS-PDSCH indicated with the first indexed HS-SCCH code by the BCCH specific H-RNTI.

Upon reception of a PAGING TYPE 1 message or a SYSTEM INFORMATION CHANGE INDICATION message containing the IE "BCCH modification info" containing the IE "MIB value tag" and containing the IE "BCCH modification time", the UE shall:

1> perform the actions as specified in subclause 8.1.1.7.3 at the time, indicated in the IE "BCCH Modification Info".

#### 8.1.1.7.3 Actions upon system information change

The UE shall:

- 1> compare the value of IE "MIB value tag" in the IE "BCCH modification info" with the value tag stored for the master information block in variable VALUE\_TAG.
- 1> if the value tags differ:
  - 2> read the master information block on BCH;
  - 2> if the value tag of the master information block in the system information is the same as the value in IE "MIB value tag" in "BCCH modification info" but different from the value tag stored in the variable VALUE\_TAG:
    - 3> perform actions as specified in subclause 8.1.1.5.
  - 2> if the value tag of the master information block in the system information is the same as the value tag stored in the variable VALUE TAG:
    - 3> for the next occurrence of the master information block:
      - 4> perform actions as specified in subclause 8.1.1.7.3 again.
  - 2> if the value tag of the master information block in the system information is different from the value tag stored in the variable VALUE\_TAG, and is different from the value in IE "MIB value tag" in "BCCH modification info":
    - 3> perform actions as specified in subclause 8.1.1.5;
    - 3> if (VTCI-VTMIB) mod 8 < 4, where VTCI is the value tag in the IE "MIB value tag" in "BCCH modification info" and VTMIB is the value tag of the master information block in the system information:
      - 4> for the next occurrence of the master information block:
        - 5> perform actions as specified in subclause 8.1.1.7.3 again.

#### 8.1.1.7.4 Actions upon expiry of a system information expiry timer

When the expiry timer of a system information block not using a value tag expires

the UE shall:

- 1> consider the content of the system information block invalid;
- 1> re-acquire the system information block again before the content can be used;

In FDD for system information blocks other than System Information Block type 7, or in states other than CELL\_FACH, or in TDD for system information blocks other than System Information Block type 14, or in states other than CELL\_FACH or CELL\_DCH the UE may:

1> postpone reading the system information block until the content is needed.

In FDD for System Information Block type 7, while in state CELL\_FACH, and in TDD for System Information Block type 14, while in state CELL\_FACH or CELL DCH the UE shall always keep an up to date version of the relevant IEs, unless this is not possible because system information can not be received due to bad radio conditions.

# 8.1.2 Paging

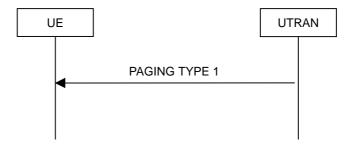


Figure 8.1.2-1: Paging

#### 8.1.2.1 General

This procedure is used to transmit paging information to selected UEs in idle mode, CELL\_PCH or URA\_PCH state using the paging control channel (PCCH). Upper layers in the network may request paging, to e.g. establish a signalling connection. UTRAN may initiate paging for UEs in CELL\_PCH or URA\_PCH state to trigger a cell update procedure. In addition, UTRAN may initiate paging for UEs in idle mode, CELL\_PCH and URA\_PCH state to trigger reading of updated system information. UTRAN may also initiate paging for UEs in CELL\_PCH and URA\_PCH state to release the RRC connection.

#### 8.1.2.2 Initiation

UTRAN initiates the paging procedure by transmitting a PAGING TYPE 1 message on an appropriate paging occasion on the PCCH.

UTRAN may repeat transmission of a PAGING TYPE 1 message to a UE in several paging occasions to increase the probability of proper reception of a page.

UTRAN may page several UEs in the same paging occasion by including one IE "Paging record" for each UE in the PAGING TYPE 1 message.

For CN originated paging, UTRAN should set the IE "Paging cause" to the cause for paging received from upper layers. If no cause for paging is received from upper layers, UTRAN should set the value "Terminating – cause unknown".

UTRAN may also indicate that system information has been updated, by including the value tag of the master information block in the IE "BCCH modification info" in the PAGING TYPE 1 message. In this case, UTRAN may omit the IEs "Paging record".

## 8.1.2.3 Reception of a PAGING TYPE 1 message by the UE

A UE in idle mode, CELL\_PCH state or URA\_PCH state shall receive the paging information for all its monitored paging occasions. For a UE in idle mode, the paging occasions are specified in [4] and depend on the IE "CN domain specific DRX cycle length coefficient", as specified in subclause 8.6.3.1a. For a UE in CELL\_PCH state or URA\_PCH state, the paging occasions depend also on the IE "UTRAN DRX cycle length coefficient" and the IE "RRC State Indicator", as specified in subclauses 8.6.3.2 and 8.6.3.3 respectively.

When the UE receives a PAGING TYPE 1 message, it shall perform the actions as specified below.

If the UE is in idle mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

- 1> if the IE "Used paging identity" is a CN identity:
  - 2> compare the IE "UE identity" with all of its allocated CN UE identities:
  - 2> if one match is found:
    - 3> indicate reception of paging; and
    - 3> forward the IE "CN domain identity", the IE "UE identity" and the IE "Paging cause" to the upper layers.

- 1> otherwise:
  - 2> ignore that paging record.

If the UE is in connected mode, for each occurrence of the IE "Paging record" included in the message the UE shall:

- 1> if the IE "Used paging identity" is a UTRAN single UE identity and if this U-RNTI is the same as the U-RNTI allocated to the UE stored in the UE variable U\_RNTI:
  - 2> if the optional IE "CN originated page to connected mode UE" is included:
    - 3> indicate reception of paging; and
    - 3> forward the IE "CN domain identity", the IE "Paging cause" and the IE "Paging record type identifier" to the upper layers.
  - 2> if the IE "Release indicator" in the IE "RRC connection release information" has the value "Release":
    - 3> release all its radio resources;
    - 3> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to the upper layers;
    - 3> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
    - 3> clear the variable ESTABLISHED RABS;
    - 3> pass the value of the IE "Release cause" received in the IE "Release information" to upper layers;
    - 3> enter idle mode;
    - 3> perform the actions specified in subclause 8.5.2 when entering idle mode;
    - 3> and the procedure ends.
  - 2> otherwise:
    - 3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.
  - 2> ignore any other remaining IE "Paging record" that may be present in the message.
- 1> if the IE "Used paging identity" is a UTRAN group identity and there is a group identity match according to subclause 8.6.3.13:
  - 2> if the IE "Release indicator" in the IE "RRC connection release information" has the value "Release":
    - 3> release all its radio resources;
    - 3> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to the upper layers;
    - 3> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
    - 3> clear the variable ESTABLISHED\_RABS;
    - 3> pass the value of the IE "Release cause" received in the IE "Release information" to upper layers;
    - 3> enter idle mode;
    - 3> perform the actions specified in subclause 8.5.2 when entering idle mode;
    - 3> and the procedure ends.
  - 2> otherwise:
    - 3> perform a cell update procedure with cause "paging response" as specified in subclause 8.3.1.2.

2> ignore any other remaining IE "Paging record" that may be present in the message.

#### 1> otherwise:

2> ignore that paging record.

If the IE "BCCH modification info" is included, any UE in idle mode, CELL\_PCH or URA\_PCH state shall perform the actions as specified in subclause 8.1.1 in addition to any actions caused by the IE "Paging record" occurrences in the message as specified above.

## 8.1.3 RRC connection establishment

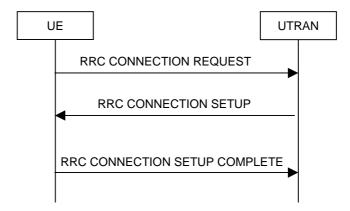


Figure 8.1.3-1: RRC Connection Establishment, network accepts RRC connection

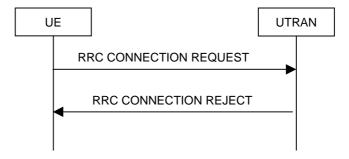


Figure 8.1.3-2: RRC Connection Establishment, network rejects RRC connection

## 8.1.3.1 General

The purpose of this procedure is to establish an RRC connection.

# 8.1.3.2 Initiation

The UE shall initiate the procedure when upper layers in the UE requests the establishment of a signalling connection and the UE is in idle mode (no RRC connection exists), as specified in subclause 8.1.8.

Upon initiation of the procedure, the UE shall:

1> set the variable PROTOCOL\_ERROR\_INDICATOR to FALSE;

#### 1> if the USIM is present:

2> set the value of "THRESHOLD" in the variable "START\_THRESHOLD" to the 20 MSBs of the value stored in the USIM [50] for the maximum value of START for each CN Domain.

#### 1> if the SIM is present:

2> set the value of "THRESHOLD" in the variable "START\_THRESHOLD" to the default value in [40] for each CN Domain.

- 1> set the IE "Initial UE identity" in the variable INITIAL\_UE\_IDENTITY according to subclause 8.5.1;
- 1> set the contents of the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;
- 1> set CFN in relation to SFN of current cell according to subclause 8.5.15;
- 1> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
- 1> submit the RRC CONNECTION REQUEST message for transmission on the uplink CCCH;
- 1> set counter V300 to 1; and
- 1> if the variable ESTABLISHMENT\_CAUSE is set to "MBMS reception":
  - 2> when the MAC layer indicates success or failure to transmit the message:
    - 3> if the MAC layer indicates failure:
      - 4> enter idle mode:
      - 4> consider the procedure to be unsuccessful;
      - 4> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2;
      - 4> the procedure ends.
    - 3> else:
      - 4> start timer T318;
      - 4> apply value 0 for counter N300 regardless of the value included in IE "UE Timers and Constants in idle mode".
- 1> otherwise:
  - 2> start timer T300 when the MAC layer indicates success or failure to transmit the message.
- 1> for TDD; or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_FACH state; or
- 1> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 2> select a Secondary CCPCH according to [4];
  - 2> start receiving all FACH transport channels mapped on the selected Secondary CCPCH.
- 1> otherwise:
  - 2> set variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED to TRUE; and
  - 2> start receiving the HS-DSCH according to the procedure in subclause 8.5.37.

## 8.1.3.3 RRC CONNECTION REQUEST message contents to set

The UE shall, in the transmitted RRC CONNECTION REQUEST message:

- 1> set the IE "Establishment cause" to the value of the variable ESTABLISHMENT\_CAUSE;
- 1> set the IE "Initial UE identity" to the value of the variable INITIAL\_UE\_IDENTITY;
- 1> set the IE "Protocol error indicator" to the value of the variable PROTOCOL\_ERROR\_INDICATOR; and
- 1> include the IE "Predefined configuration status information" and set this IE to true if the UE has all preconfigurations stored with the same value tag as broadcast in the cell in which the RRC connection establishment is initiated.

- 1> if the UE is attempting to establish the signalling connection to PS-domain:
  - 2> include the IE "Domain Indicator" and set it to "PS domain".
- 1> else if the UE is attempting to establish the signalling connection to CS domain:
  - 2> include the IE "Domain Indicator" and set it to "CS domain";
  - 2> set the value of the IE "Call type" to "speech", "video" or "other" according to the call being initiated.
- 1> if the UE only supports HS-DSCH but not E-DCH:
  - 2> include the IE "UE capability indication" and set it to the "HS-DSCH" value.
- 1> if the UE supports HS-DSCH and E-DCH:
  - 2> include the IE "UE capability indication" and set it to the "HS-DSCH+E-DCH" value.
- 1> if, according to [4], the High-mobility state is applicable and it has been detected by the UE:
  - 2> include the IE "UE Mobility State Indicator" and set it to the "High-MobilityDetected" value.
- 1> if the UE performs connection establishment for MBMS ptp radio bearer request as specified in subclause 8.6.9.6; and
- 1> if one or more of the MBMS services for which the UE initiates the ptp radio bearer request concerns an MBMS Selected Service:
  - 2> for each MBMS Selected Service that is indicated on MCCH and for which the UE initiates the ptp radio bearer request:
    - 3> order the MBMS Selected Services such that those selected with a higher priority are listed in the IE "MBMS Selected Services Short" before those selected with a lower priority;
    - 3> include the IE "MBMS Selected Service ID" within the IE "MBMS Selected Services Short" and set it to a value in accordance with subclause 8.6.9.8.
- 1> otherwise if the UE performs connection establishment for MBMS counting as specified in subclause 8.7.4; and
- 1> if one or more of the MBMS services for which the UE initiates the counting response concerns an MBMS Selected Service:
  - 2> for each MBMS Selected Service that is indicated on MCCH and for which the UE initiates the counting response:
    - 3> order the MBMS Selected Services such that those selected with a higher priority are listed in the IE "MBMS Selected Services Short" before those selected with a lower priority;
    - 3> include the IE "MBMS Selected Service ID" within the IE "MBMS Selected Services Short" and set it to a value in accordance with subclause 8.6.9.8.
- 1> if the UE included one or more "MBMS Selected Service ID" IEs:
  - 2> include the IE "MBMS Modification Period identity" and set it to a value in accordance with subclause 8.5.29.
- 1> if the UE supports MAC-ehs:
  - 2> include the IE "MAC-ehs support " and set it to TRUE.
- 1> if the UE supports HS-DSCH reception in CELL\_FACH state:
  - 2> include the IE "HS-PDSCH in CELL\_FACH" and set it to TRUE.

The UE shall not include the IE "UE Specific Behaviour Information 1 idle".

# 8.1.3.4 Reception of an RRC CONNECTION REQUEST message by the UTRAN

Upon receiving an RRC CONNECTION REQUEST message, UTRAN should either:

- 1> accept the request and use a predefined or default radio configuration, in which case it should:
  - 2> include the following information in the RRC CONNECTION SETUP message:
    - 3> the IE "Predefined configuration identity", to indicate which pre-defined configuration of RB and, transport channel parameters shall be used; or
    - 3> the IE "Default configuration mode" and IE "Default configuration identity", to indicate which default configuration of RB and transport channel parameters shall be used;
    - 3> PhyCH information elements.
  - 2> submit the RRC CONNECTION SETUP message to the lower layers for transmission on the downlink CCCH.
- NOTE 1: UTRAN should only apply a predefined radio configuration in case it orders the UE to enter CELL\_DCH. This is because the predefined configuration information included in System Information Block 16 mandatorily includes information only required in CELL\_DCH state.
- 1> accept the request without using a predefined or default radio configuration, in which case it should:
  - 2> include in the RRC CONNECTION SETUP message the complete set of RB, TrCH and PhyCH information elements to be used;
  - 2> submit the RRC CONNECTION SETUP message to the lower layers for transmission on the downlink CCCH;
- NOTE 2: In R'99, the RRC CONNECTION SETUP message always includes the IEs "Added or Reconfigured TrCH information list", both for uplink and downlink transport channels, even if UTRAN orders the UE to move to CELL\_FACH and hence need not configure any transport channels. In these cases, UTRAN may include a configuration that adds little to the encoded message size e.g. a DCH with a single zero size transport format. At a later stage, UTRAN may either remove or reconfigure this configuration.
- 1> submit an RRC CONNECTION REJECT message on the downlink CCCH. In the RRC CONNECTION REJECT message, the UTRAN may direct the UE to another UTRA carrier or to another system. After the RRC CONNECTION REJECT message has been sent, all context information for the UE may be deleted in UTRAN.

## 8.1.3.5 Cell re-selection, T300 or T318 timeout

- 1> if the UE has not yet received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL\_UE\_IDENTITY; and
- 1> if cell re-selection or expiry of timer T300 or timer T318 occurs:

#### the UE shall:

- 1> check the value of V300; and
  - 2> if V300 is equal to or smaller than N300:
    - 3> if cell re-selection occurred:
      - 4> set CFN in relation to SFN of current cell according to subclause 8.5.15.
      - 4> for FDD, if the UE supports HS-DSCH reception in CELL\_FACH state and if IE: "HS-DSCH common system information" is included in System Information Block type 5 or System Information Block type 5bis:
        - 5> if variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED is set to TRUE:
          - 6> reset the MAC-ehs entity [15].

5> else:

- 6> set the variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED to TRUE;
- 6> start receiving the HS-DSCH according to the procedure in subclause 8.5.37.
- 3> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;
- 3> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13; and
- 3> apply the given Access Service Class when accessing the RACH;
- 3> submit a new RRC CONNECTION REQUEST message to lower layers for transmission on the uplink CCCH:
- 3> increment counter V300;
- 3> restart timer T300 when the MAC layer indicates success or failure to transmit the message.
- 2> if V300 is greater than N300:
  - 3> enter idle mode.
  - 3> consider the procedure to be unsuccessful;
  - 3> Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
  - 3> the procedure ends.

#### 8.1.3.5a Abortion of RRC connection establishment

If the UE has not yet entered UTRA RRC Connected mode and the RRC connection establishment is to be aborted as specified in subclause 8.1.8, the UE shall:

- 1> consider the procedure to be unsuccessful;
- 1> perform the actions when entering idle mode as specified in subclause 8.5.2.

The procedure ends.

## 8.1.3.6 Reception of an RRC CONNECTION SETUP message by the UE

The UE shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION SETUP message with the value of the variable INITIAL UE IDENTITY.

If the values are different, the UE shall:

1> ignore the rest of the message.

If the values are identical, the UE shall:

- 2> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":
  - 3> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity" with the following exception;
    - 4> ignore the IE "RB to setup list" and the IE "Re- establishment timer".
- NOTE: IE above IEs are mandatory to include in IE "Predefined RB configuration" that is included in System Information Block 16 but should be ignored since it is not possible to establish a RAB during RRC connection establishment.
  - 3> initiate the physical channels in accordance with the received physical channel information elements;

- 2> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":
  - 3> initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" with the following exception:
    - 4> ignore the radio bearers other than signalling radio bearers.
  - 3> initiate the physical channels in accordance with the received physical channel information elements.
- NOTE: IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used.
  - 2> if IE "Specification mode" is set to "Complete specification":
    - 3> initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.
- 1> clear the variable ESTABLISHMENT\_CAUSE;
- 1> for FDD, if the HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED is set to TRUE:
  - 2> set the variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED to FALSE.
- 1> stop timer T300 or T318, whichever one is running, and act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:
  - 2> if the UE, according to subclause 8.6.3.3, will be in the CELL\_FACH state at the conclusion of this procedure:
    - 3> if the IE "Frequency info" is included:
      - 4> select a suitable UTRA cell according to [4] on that frequency.
    - 3> enter UTRA RRC connected mode;
    - 3> select PRACH according to subclause 8.5.17;
    - 3> for TDD; or
    - 3> for FDD, if the UE does not support HS-DSCH reception in CELL\_FACH state; or
    - 3> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis:
      - 4> select Secondary CCPCH according to subclause 8.5.19;
    - 3> else:
      - 4> set variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED to FALSE;
      - 4> if the RBs have the multiplexing option with transport channel type "HS-DSCH" for the DL and transport channel type "RACH" in the UL; and
      - 4> if "new H-RNTI" and "new C-RNTI" are included:
        - 5> store the "new H-RNTI" according to subclause 8.6.3.1b;
        - 5> store the "new C-RNTI" according to subclause 8.6.3.9;
        - 5> and start to receive HS-DSCH according to the procedure in subclause 8.5.36.
      - 4> else:
        - 5> clear variable C\_RNTI and delete any stored C-RNTI value;
        - 5> clear variable H\_RNTI and delete any stored H-RNTI value;

- 5> clear any stored IE "HARQ Info";
- 5> set the variable INVALID CONFIGURATION to TRUE.
- 3> ignore the IE "UTRAN DRX cycle length coefficient" and stop using DRX.
- 1> if the UE, according to subclause 8.6.3.3, will be in the CELL\_DCH state at the conclusion of this procedure:
  - 2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);
  - 2> enter UTRA RRC connected mode;
  - 2> ignore the IE "UTRAN DRX cycle length coefficient" and stop using DRX.
- 1> submit an RRC CONNECTION SETUP COMPLETE message to the lower layers on the uplink DCCH after successful state transition per subclause 8.6.3.3, with the contents set as specified below:
  - 2> set the IE "RRC transaction identifier" to:
    - 3> the value of "RRC transaction identifier" in the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS; and
    - 3> clear that entry.
  - 2> if the USIM or SIM is present:
    - 3> set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP COMPLETE message with the corresponding START value that is stored in the USIM [50] if present, or as stored in the UE if the SIM is present; and then
    - 3> set the START value stored in the USIM [50] if present, and as stored in the UE if the SIM is present for any CN domain to the value "THRESHOLD" of the variable START\_THRESHOLD.
  - 2> if neither the USIM nor SIM is present:
    - 3> set the "START" for each CN domain in the IE "START list" in the RRC CONNECTION SETUP COMPLETE message to zero;
    - 3> set the value of "THRESHOLD" in the variable "START\_THRESHOLD" to the default value [40].
  - 2> retrieve its UTRA UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and then
  - 2> include this in IE "UE radio access capability" and IE "UE radio access capability extension", provided this IE is included in variable UE\_CAPABILITY\_REQUESTED;
  - 2> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and then
  - 2> include this in IE "UE system specific capability";
  - 2> if the variable DEFERRED\_MEASUREMENT\_STATUS is TRUE:
    - 3> if System Information Block type 11 is scheduled on the BCCH and the UE has not read nor stored the IEs present in this System Information Block, or
    - 3> if System Information Block type 11bis is scheduled on the BCCH and the UE has not read nor stored the IEs present in this System Information Block, or
    - 3> if System Information Block type 12 is scheduled on the BCCH and the UE has not read nor stored the IEs present in this System Information Block:
      - 4> include IE "Deferred measurement control reading".

NOTE: If the "RRC State indicator" is set to the value "CELL\_FACH", the UE continues to read and store the IEs in System Information Block type 11, System Information Block type 11bis, and System Information Block type 12, if transmitted, after submitting the RRC Connection Setup Complete message to lower layers (see 8.5.31).

When the RRC CONNECTION SETUP COMPLETE message has been submitted to lower layers for transmission the UE shall:

- 1> if the UE has entered CELL\_DCH state:
  - 2> if the IE "Deferred measurement control reading" was included in the RRC CONNECTION SETUP COMPLETE message:
    - 3> clear variable MEASUREMENT\_IDENTITY;
    - 3> clear the variable CELL\_INFO\_LIST.
- 1> if the UE has entered CELL\_FACH state:
  - 2> start timer T305 using its initial value if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS\_AND\_CONSTANTS.
- 1> store the contents of the variable UE\_CAPABILITY\_REQUESTED in the variable UE\_CAPABILITY\_TRANSFERRED;
- 1> initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
- 1> consider the procedure to be successful;

And the procedure ends.

## 8.1.3.7 Physical channel failure or cell re-selection

- 1> If the UE failed to establish, per subclause 8.5.4, the physical channel(s) indicated in the RRC CONNECTION SETUP message; or
- 1> if the UE performs cell re-selection; or
- 1> if the UE will be in the CELL\_FACH state at the conclusion of this procedure; and
- 1> if the received RRC CONNECTION SETUP message included the IE "Frequency info" and the UE could not find a suitable UTRA cell on that frequency but it could find a suitable UTRA cell on another frequency; or
- 1> if the received RRC CONNECTION SETUP message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE; or
- 1> if the contents of the variable C\_RNTI is empty;
- 1> after having received an RRC CONNECTION SETUP message with the value of the IE "Initial UE identity" equal to the value of the variable INITIAL\_UE\_IDENTITY; and
- 1> before the RRC CONNECTION SETUP COMPLETE message is delivered to lower layers for transmission:

#### the UE shall:

- 1> clear the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> check the value of V300, and:
  - 2> if V300 is equal to or smaller than N300:
    - 3> set CFN in relation to SFN of current cell according to subclause 8.5.15;
    - 3> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;

- 3> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
- 3> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
- 3> increment counter V300; and
- 3> restart timer T300 when the MAC layer indicates success or failure in transmitting the message.
- 2> if V300 is greater than N300:
  - 3> enter idle mode;
  - 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
  - 3> consider the RRC establishment procedure to be unsuccessful;
  - 3> the procedure ends.

# 8.1.3.8 Invalid RRC CONNECTION SETUP message, unsupported configuration or invalid configuration

If the UTRAN instructs the UE to use a configuration, which it does not support e.g., the message includes a predefined configuration that the UE has not stored and/or if the received message causes the variable UNSUPPORTED\_CONFIGURATION or the variable INVALID\_CONFIGURATION to be set to TRUE the UE shall perform procedure specific error handling as specified in this subclause.

If the UE receives an RRC CONNECTION SETUP message which contains an IE "Initial UE identity" with a value which is identical to the value of the variable INITIAL\_UE\_IDENTITY, but the RRC CONNECTION SETUP message contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> stop timer T300 or T318, whichever one is running; and
- 1> clear the entry for the RRC CONNECTION SETUP message in the table "Rejected transactions" in the variable TRANSACTIONS and proceed as below.

If the UE receives an RRC CONNECTION SETUP message which contains an IE "Initial UE identity" with a value which is identical to the value of the variable INITIAL\_UE\_IDENTITY:

- 1> if the RRC CONNECTION SETUP message contained a configuration the UE does not support; and/or
- 1> if the variable UNSUPPORTED\_CONFIGURATION becomes set to TRUE due to the received RRC CONNECTION SETUP message; and/or
- 1> if the variable INVALID\_CONFIGURATION becomes set to TRUE due to the received RRC CONNECTION SETUP message:

the UE shall:

- 1> stop timer T300 or T318, whichever one is running; and
- 1> clear the entry for the RRC CONNECTION SETUP message in the table "Accepted transactions" in the variable TRANSACTIONS and proceed as below.

If V300 is equal to or smaller than N300, the UE shall:

- 1> set the variable PROTOCOL ERROR INDICATOR to TRUE;
- 1> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;
- 1> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13; and
- 1> apply the given Access Service Class when accessing the RACH;

- 1> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
- 1> increment counter V300; and
- 1> restart timer T300 when the MAC layer indicates success or failure in transmitting the message.

If V300 is greater than N300, the UE shall:

- 1> enter idle mode;
- 1> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
- 1> consider the RRC establishment procedure to be unsuccessful;
- 1> the procedure ends.

# 8.1.3.9 Reception of an RRC CONNECTION REJECT message by the UE

When the UE receives an RRC CONNECTION REJECT message on the downlink CCCH, it shall compare the value of the IE "Initial UE identity" in the received RRC CONNECTION REJECT message with the value of the variable INITIAL\_UE\_IDENTITY:

If the values are different, the UE shall ignore the rest of the message;

If the values are identical, the UE shall:

- 1> stop timer T300 or T318, whichever one is running; and
- 1> clear the entry for the RRC CONNECTION REJECT message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> if the UE has disabled cell reselection to a UTRA carrier due to an earlier RRC CONNECTION REJECT message, the UE shall resume cell reselection to that UTRA carrier;
- 1> if the Rejection Cause is 'unspecified' and the IE "Counting Completion" is present, the UE shall terminate an ongoing MBMS counting procedure according to subclause 8.7.4.4;
- 1> if the IE "wait time" <> '0'; and
- 1> if the IE "frequency info" is present and:
  - 2> if V300 is equal to or smaller than N300:
    - 3> select a suitable UTRA cell according to [4] on that frequency;
    - 3> after having selected and camped on a suitable cell on the designated UTRA carrier:
      - 4> set CFN in relation to SFN of current cell according to subclause 8.5.15;
      - 4> set the contents of the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;
      - 4> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
      - 4> transmit an RRC CONNECTION REQUEST message on the uplink CCCH;
      - 4> reset counter V300;
      - 4> start timer T300 when the MAC layer indicates success or failure in transmitting the message;
      - 4> disable cell reselection to original UTRA carrier until the time stated in the IE "wait time" has elapsed or until the RRC connection establishment procedure ends, whichever occurs first;

- 3> if no suitable cell on the designated UTRA carrier is found:
  - 4> wait for at least the time stated in the IE "wait time";
  - 4> set CFN in relation to SFN of current cell according to subclause 8.5.15;
  - 4> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;
  - 4> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
  - 4> then submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH of the original serving cell;
  - 4> increment counter V300;
  - 4> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
- 2> if V300 is greater than N300:
  - 3> enter idle mode;
  - 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
  - 3> consider the RRC establishment procedure to be unsuccessful;
  - 3> the procedure ends.
- 1> if the IE "inter-RAT info" is present:
  - 2> if the IE "wait time" = '0':
    - 3> the UE behaviour is not specified.
  - 2> if V300 is equal to or smaller than N300:
    - 3> if the IE "GSM target cell info" is present:
      - 4> attempt to camp on a suitable cell of the list of cells indicated for that RAT;
      - 4> if the UE selects and camps on one of the cells indicated for that RAT:
        - 5> disable cell reselection to the original RAT until the time stated in the IE "wait time" has elapsed.
      - 4> if the UE cannot find any suitable cell from the indicated ones within 10s, the UE is allowed to camp on any suitable cell on that RAT.
        - 5> after having selected and camped on a suitable cell on the designated RAT:
          - 6> the UE may disable cell reselection to the original RAT until the time stated in the IE "wait time" has elapsed.
    - 3> if the IE "GSM target cell info" is not present:
      - 4> select a suitable cell in the designated RAT;
      - 4> after having selected and camped on a suitable cell on the designated RAT:
        - 5> disable cell reselection to the original RAT until the time stated in the IE "wait time" has elapsed or until the UE successfully establishes a connection on the designated RAT, whichever occurs first.
    - 3> if no suitable cell in the designated RAT is found:
      - 4> wait at least the time stated in the IE "wait time";
      - 4> set CFN in relation to SFN of current cell according to subclause 8.5.15;

- 4> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2.
- 4> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
- 4> then submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
- 4> increment counter V300;
- 4> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
- 2> if V300 is greater than N300:
  - 3> enter idle mode;
  - 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
  - 3> consider the RRC establishment procedure to be unsuccessful;
  - 3> the procedure ends.
- 1> if the IE "wait time" <> '0'; and
- 1> if neither the IEs "frequency info" nor "inter-RAT info" are present:
  - 2> if V300 is equal to or smaller than N300:
    - 3> wait at least the time stated in the IE "wait time";
    - 3> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.2;
    - 3> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
    - 3> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH;
    - 3> increment counter V300;
    - 3> restart timer T300 when the MAC layer indicates success or failure to transmit the message;
  - 2> if V300 is greater than N300:
    - 3> enter idle mode;
    - 3> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
    - 3> consider the RRC establishment procedure to be unsuccessful;
    - 3> the procedure ends.
- 1> if the IE "wait time" = '0':
  - 2> enter idle mode;
  - 2> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
  - 2> consider the RRC establishment procedure to be unsuccessful;
  - 2> the procedure ends.

## 8.1.3.10 Invalid RRC CONNECTION REJECT message

If the UE receives an RRC CONNECTION REJECT message which contains an IE "Initial UE identity" with a value which is identical to the value of the IE "Initial UE identity" in the most recent RRC CONNECTION REQUEST message sent by the UE; but the RRC CONNECTION REJECT message contains a protocol error causing the variable

PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows:

#### The UE shall:

- 1> stop timer T300 or T318, whichever one is running; and
- 1> clear the entry for the RRC CONNECTION REJECT message in the table "Rejected transactions" in the variable TRANSACTIONS;
- 1> if V300 is equal to or smaller than N300:
  - 2> set the variable PROTOCOL\_ERROR\_INDICATOR to TRUE;
  - 2> set the IEs in the RRC CONNECTION REQUEST message according to subclause 8.1.3.3;
  - 2> perform the mapping of the Access Class to an Access Service Class as specified in subclause 8.5.13, and apply the given Access Service Class when accessing the RACH;
  - 2> submit a new RRC CONNECTION REQUEST message to the lower layers for transmission on the uplink CCCH:
  - 2> increment counter V300;
  - 2> restart timer T300 when the MAC layer indicates success or failure to transmit the message.
- 1> if V300 is greater than N300:
  - 2> enter idle mode;
  - 2> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
  - 2> consider the procedure to be successful;
  - 2> the procedure ends.

## 8.1.4 RRC connection release

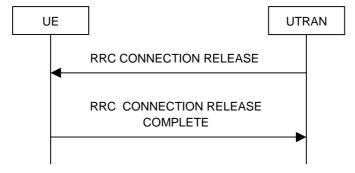


Figure 8.1.4-1: RRC Connection Release procedure on the DCCH



Figure 8.1.4-2: RRC Connection Release procedure on the CCCH

#### 8.1.4.1 General

The purpose of this procedure is to release the RRC connection including all radio bearers and all signalling radio bearers between the UE and the UTRAN. By doing so, all established signalling connections will be released.

#### 8.1.4.2 Initiation

When the UE is in state CELL\_DCH or CELL\_FACH or CELL\_PCH (FDD only), the UTRAN may at anytime initiate an RRC connection release by transmitting an RRC CONNECTION RELEASE message using UM RLC.

When UTRAN transmits an RRC CONNECTION RELEASE message the downlink DCCH should be used, if available. If the downlink DCCH is not available in UTRAN and the UE is in CELL\_FACH state, the downlink CCCH may be used.

UTRAN may transmit several RRC CONNECTION RELEASE messages to increase the probability of proper reception of the message by the UE. In such a case, the RRC SN for these repeated messages should be the same. The number of repeated messages and the interval between the messages is a network option.

## 8.1.4.3 Reception of an RRC CONNECTION RELEASE message by the UE

The UE shall receive and act on an RRC CONNECTION RELEASE message in states CELL\_DCH and CELL\_FACH and CELL\_PCH (FDD only). Furthermore this procedure can interrupt any ongoing procedures with the UE in the above listed states.

When the UE receives the first RRC CONNECTION RELEASE message; and

- 1> if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U\_RNTI; or
- 1> if the message is received on DCCH:

the UE shall perform the RRC connection release procedure as specified below.

When the UE receives the first RRC CONNECTION RELEASE message; and

1> if the message is received on the CCCH, the IE "UTRAN group identity" is present and there is a group identity match according to subclause 8.6.3.13:

the UE shall perform the RRC connection release procedure as specified below.

The UE shall:

- 1> in state CELL\_DCH:
  - 2> initialise the counter V308 to zero;
  - 2> set the IE "RRC transaction identifier" in the RRC CONNECTION RELEASE COMPLETE message to the value of "RRC transaction identifier" in the entry for the RRC CONNECTION RELEASE message in the table "Accepted transactions" in the variable TRANSACTIONS;
  - 2> submit an RRC CONNECTION RELEASE COMPLETE message to the lower layers for transmission using UM RLC on the DCCH to the UTRAN;
  - 2> if the IE "Rplmn information" is present:
    - 3> the UE may:
      - 4> store the IE on the ME together with the PLMN id for which it applies;
    - 3> the UE may then:
      - 4> utilise this information, typically indicating where a number of BCCH frequency ranges of a RAT may be expected to be found, during subsequent Rplmn selections of the indicated PLMN.
  - 2> if the IE "UE Mobility State Indicator" is present:

- 3> consider the High-mobility state to have being detected when entering idle mode.
- 2> start timer T308 when the RRC CONNECTION RELEASE COMPLETE message is sent on the radio interface.
- 1> in state CELL FACH:
  - 2> if the RRC CONNECTION RELEASE message was received on the DCCH:
    - 3> set the IE "RRC transaction identifier" in the RRC CONNECTION RELEASE COMPLETE message to the value of "RRC transaction identifier" in the entry for the RRC CONNECTION RELEASE message in the table "Accepted transactions" in the variable TRANSACTIONS;
    - 3> submit an RRC CONNECTION RELEASE COMPLETE message to the lower layers for transmission using AM RLC on the DCCH to the UTRAN.
    - 3> when the successful transmission of the RRC CONNECTION RELEASE COMPLETE message has been confirmed by the lower layers:
      - 4> release all its radio resources; and
      - 4> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers; and
      - 4> clear any entry for the RRC CONNECTION RELEASE message in the tables "Accepted transactions" and "Rejected transactions" in the variable TRANSACTIONS;
      - 4> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
      - 4> clear the variable ESTABLISHED\_RABS;
      - 4> pass the value of the IE "Release cause" received in the RRC CONNECTION RELEASE message to upper layers;
      - 4> enter idle mode;
      - 4> perform the actions specified in subclause 8.5.2 when entering idle mode.
    - 3> and the procedure ends.
  - 2> if the RRC CONNECTION RELEASE message was received on the CCCH:
    - 3> release all its radio resources;
    - 3> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to the upper layers;
    - 3> clear any entry for the RRC CONNECTION RELEASE message in the tables "Accepted transactions" and "Rejected transactions" in the variable TRANSACTIONS;
    - 3> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
    - 3> clear the variable ESTABLISHED RABS;
    - 3> pass the value of the IE "Release cause" received in the RRC CONNECTION RELEASE message to upper layers;
    - 3> enter idle mode;
    - 3> perform the actions specified in subclause 8.5.2 when entering idle mode;
    - 3> and the procedure ends.

# 8.1.4.4 Invalid RRC CONNECTION RELEASE message

If the RRC CONNECTION RELEASE message contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, and if the "protocol error cause" in PROTOCOL\_ERROR\_INFORMATION is set to any cause value except "ASN.1 violation or encoding error", the UE shall perform procedure specific error handling as follows:

#### The UE shall:

- 1> ignore any IE(s) causing the error but treat the rest of the RRC CONNECTION RELEASE message as normal according to subclause 8.1.4.3, with an addition of the following actions:
  - 2> if the RRC CONNECTION RELEASE message was received on the DCCH:
    - 3> set the IE "RRC transaction identifier" in the RRC CONNECTION RELEASE COMPLETE message to the value of "RRC transaction identifier" in the entry for the RRC CONNECTION RELEASE message in the table "Rejected transactions" in the variable TRANSACTIONS;
    - 3> include the IE "Error indication" in the RRC CONNECTION RELEASE COMPLETE message with:
      - 4> the IE "Failure cause" set to the cause value "Protocol error"; and
      - 4> the IE "Protocol error information" set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.

#### 8.1.4.5 Cell re-selection or radio link failure

If the UE performs cell re-selection or the radio link failure criteria in subclause 8.5.6 are met at any time during the RRC connection release procedure and the UE has not yet entered idle mode, the UE shall:

- 1> if cell re-selection occurred (CELL\_FACH state or CELL\_PCH (FDD only)):
  - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection".
- 1> if radio link failure occurred (CELL DCH state):
  - 2> release all its radio resources;
  - 2> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
  - 2> clear the variable ESTABLISHED\_RABS;
  - 2> enter idle mode;
  - 2> perform the actions specified in subclause 8.5.2 when entering idle mode;
  - 2> and the procedure ends.

# 8.1.4.6 Expiry of timer T308, unacknowledged mode transmission

When in state CELL\_DCH and the timer T308 expires, the UE shall:

- 1> increment V308 by one;
- 1> if V308 is equal to or smaller than N308:
  - 2> prior to retransmitting the RRC CONNECTION RELEASE COMPLETE message:
    - 3> if the IE "Status" in the variable INTEGRITY PROTECTION INFO has the value "Started":
      - 4> include the same IEs as in the last unsuccessful attempt of this message, except for the IE "Integrity check info", which is set as specified in subclause 8.5.10.

- 3> else:
  - 4> include the same IEs as in the last unsuccessful attempt of this message.
- 2> set the IE "RRC transaction identifier" in the RRC CONNECTION RELEASE COMPLETE message retransmitted below to the value of "RRC transaction identifier" in the entry for the RRC CONNECTION RELEASE message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 2> send the RRC CONNECTION RELEASE COMPLETE message on signalling radio bearer RB1;
- 2> start timer T308 when the RRC CONNECTION RELEASE COMPLETE message is sent on the radio interface.
- 1> if V308 is greater than N308:
  - 2> release all its radio resources;
  - 2> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear any entry for the RRC CONNECTION RELEASE message in the tables "Accepted transactions" and "Rejected transactions" in the variable TRANSACTIONS;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
  - 2> clear the variable ESTABLISHED RABS;
  - 2> enter idle mode:
  - 2> perform the actions specified in subclause 8.5.2 when entering idle mode;
  - 2> and the procedure ends.

#### 8.1.4.7 Void

# 8.1.4.8 Reception of an RRC CONNECTION RELEASE COMPLETE message by UTRAN

When UTRAN receives an RRC CONNECTION RELEASE COMPLETE message from the UE, it should:

1> release all UE dedicated resources and the procedure ends on the UTRAN side.

# 8.1.4.9 Unsuccessful transmission of the RRC CONNECTION RELEASE COMPLETE message, acknowledged mode transmission

When acknowledged mode was used and RLC does not succeed in transmitting the RRC CONNECTION RELEASE COMPLETE message, the UE shall:

- 1> release all its radio resources;
- 1> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
- 1> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 1> clear the variable ESTABLISHED\_RABS;
- 1> enter idle mode;
- 1> perform the actions specified in subclause 8.5.2 when entering idle mode;

1> and the procedure ends.

# 8.1.4.10 Detection of loss of dedicated physical channel by UTRAN in CELL\_DCH state

If the release is performed from the state CELL\_DCH, and UTRAN detects loss of the dedicated physical channel according to subclause 8.5.6, UTRAN may release all UE dedicated resources, even if no RRC CONNECTION RELEASE COMPLETE message has been received.

# 8.1.4.11 Failure to receive RRC CONNECTION RELEASE COMPLETE message by UTRAN

If UTRAN does not receive any RRC CONNECTION RELEASE COMPLETE message, it should release all UE dedicated resources.

# 8.1.4a RRC connection release requested by upper layers

#### 8.1.4a.1 General

The purpose of this procedure is to release the RRC connection and bar the current cell or cells. The procedure is requested by upper layers when they determine that the network has failed an authentication check [5].

#### 8.1.4a.2 Initiation

If the upper layers request the release of the RRC connection, the UE shall:

- 1> release all its radio resources;
- 1> enter idle mode;
- 1> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2;
- 1> if the UE was in CELL\_DCH state prior to entering idle mode:
  - 2> consider all cells that were in the active set prior to entering idle mode to be barred according to [4]; and
  - 2> consider the barred cells as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE "T<sub>barred</sub>".
- 1> if the UE was in CELL FACH or CELL PCH or URA PCH state prior to entering idle mode:
  - 2> consider the cell on which the UE was camped prior to entering idle mode to be barred according to [4]; and
  - 2> consider the barred cell as using the value "allowed" in the IE "Intra-frequency cell re-selection indicator", and the maximum value in the IE "T<sub>barred</sub>".

## 8.1.5 Void

# 8.1.6 Transmission of UE capability information

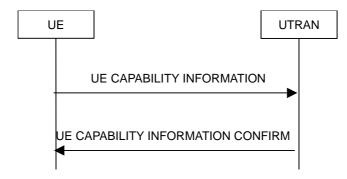


Figure 8.1.6-1: Transmission of UE capability information, normal flow

#### 8.1.6.1 General

The UE capability update procedure is used by the UE to convey UE specific capability information to the UTRAN.

#### 8.1.6.2 Initiation

The UE shall initiate the UE capability update procedure in the following situations:

- 1> the UE receives a UE CAPABILITY ENQUIRY message from the UTRAN;
- 1> while in CELL\_DCH or CELL\_FACH state, the UE capabilities change compared to those stored in the variable UE\_CAPABILITY\_TRANSFERRED, and the variable RNC\_CAPABILITY\_CHANGE\_SUPPORT is set to TRUE.

If the UE CAPABILITY INFORMATION message is sent in response to a UE CAPABILITY ENQUIRY message, the UE shall:

- 1> include the IE "RRC transaction identifier"; and
- 1> set it to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> for the UE capabilities defined prior to REL-6:
  - 2> retrieve its UTRA UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
  - 2> include this in IE "UE radio access capability" and in IE "UE radio access capability extension", provided this IE is included in variable UE\_CAPABILITY\_REQUESTED;
  - 2> retrieve its inter-RAT-specific UE radio access capability information elements from variable UE\_CAPABILITY\_REQUESTED; and
  - 2> include this in IE "UE system specific capability".
- 1> for the UE capabilities defined in REL-6 or later:
  - 2> include the information elements associated with the capabilities included in the variable UE\_CAPABILITY\_REQUESTED and the variable UE\_CAPABILITY\_TRANSFERRED.

If the UE CAPABILITY INFORMATION message is sent because one or more of the UE capabilities change compared to those stored in the variable UE\_CAPABILITY\_TRANSFERRED while in connected state, the UE shall:

- 1> for the UE capabilities defined prior to REL-6, include the information elements associated with the capabilities that have changed in the UE CAPABILITY INFORMATION message; and
- 1> for the UE capabilities defined in REL-6 or later, include the information elements associated with the capabilities included in the variable UE\_CAPABILITY\_TRANSFERRED.

If the UE is in CELL\_PCH or URA\_PCH state, it shall:

- 1> if variable H\_RNTI and variable C\_RNTI are set:
  - 2> continue as below.
- 1> else:
  - 2> perform a cell update procedure using the cause "uplink data transmission", see subclause 8.3.1.

The UE RRC shall submit the UE CAPABILITY INFORMATION message to the lower layers for transmission on the uplink DCCH using AM RLC. When the message has been delivered to lower layers for transmission the UE RRC shall start timer T304 and set counter V304 to 1.

A UE in connected mode should only indicate changes of capability in the IEs "DL capability with simultaneous HS-DSCH configuration", "Transport channel capability", "Physical channel capability", "Device type", and the IE "UE power class extension" within "RF capability extension".

The UE should not request a changed capability that would render an existing CS configuration invalid.

A UE with HS-PDSCH configured should not request a changed capability that removes support for HSDPA or HSUPA entirely; it may request reduction of its capabilities to the lowest category, but not to "DCH only".

If the UE is MAC-ehs capable, the UE shall signal a value in the "HS-DSCH physical layer category extension" IE.

If the UE signals an "HS-DSCH physical layer category extension" of 13, 15 or 17, it shall signal an "HS-DSCH physical layer category" of 9.

If the UE signals an "HS-DSCH physical layer category extension" of 14, 16 or 18, it shall signal an "HS-DSCH physical layer category" of 10.

The UE shall use the "Total number of soft channel bits" (defined in Table 5.1a of [35]) for the category it has signalled, as follows:

- 1> If MAC-hs is configured, the UE uses the category it has signalled in the IE "HS-DSCH physical layer category";
- 1> If MAC-ehs is configured, the UE uses the category it has signalled in the IE "HS-DSCH physical layer category extension".

## 8.1.6.3 Reception of a UE CAPABILITY INFORMATION message by the UTRAN

Upon reception of a UE CAPABILITY INFORMATION message, the UTRAN should transmit a UE CAPABILITY INFORMATION CONFIRM message on the downlink DCCH using UM or AM RLC. After the UE CAPABILITY INFORMATION CONFIRM message has been submitted to the lower layers for transmission, the procedure is complete.

If the received UE CAPABILITY INFORMATION message indicates capabilities that would be insufficient for the UE to continue in an ongoing service, the UTRAN may reconfigure the bearers for the ongoing service. In such a case, if the UTRAN does not perform such a reconfiguration, it should set the IE "Acceptance of requested change of capability" to "Refused" in the UE CAPABILITY INFORMATION CONFIRM message.

# 8.1.6.4 Reception of the UE CAPABILITY INFORMATION CONFIRM message by the UE

Upon reception of a UE CAPABILITY INFORMATION CONFIRM message, the UE shall:

- 1> stop timer T304;
- 1> if there is an entry for the UE CAPABILITY ENQUIRY message is present in the table "Accepted transactions" in the variable TRANSACTIONS:
  - 2> clear that entry.
- 1> if the IE "Acceptance of requested change of capability" is included and set to "Accepted":

- 2> update its variable UE\_CAPABILITY\_TRANSFERRED with the UE capabilities it has last transmitted to the UTRAN during the current RRC connection.
- 1> if the IE "Acceptance of requested change of capability" is included and set to "Accepted with reconfiguration to follow":
  - 2> when a reconfiguration message with the flag "Reconfiguration in response to requested change of UE capability" set to TRUE, update its variable UE\_CAPABILITY\_TRANSFERRED with the UE capabilities it has last transmitted to the UTRAN during the current RRC connection;
  - 2> if a reconfiguration message with the flag "Reconfiguration in response to requested change of UE capability" set to TRUE it is not received by the UE within a time determined by the implementation, the UE shall consider the change of capabilities to be refused by the UTRAN.
- 1> if the IE "Acceptance of requested change of capability" is included and set to "Refused":
  - 2> consider the request for a change of capabilities to be refused;
  - 2> wait at least 300 seconds before transmitting another such request.
- 1> clear the variable UE\_CAPABILITY\_REQUESTED;
- 1> and the procedure ends.

## 8.1.6.5 Invalid UE CAPABILITY INFORMATION CONFIRM message

If the UE receives a UE CAPABILITY INFORMATION CONFIRM message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows:

- 1> stop timer T304;
- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to UE CAPABILITY INFORMATION CONFIRM; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY INFORMATION CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION;
- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
  - 2> restart timer T304 and continue with any ongoing procedures or processes as if the invalid UE CAPABILITY INFORMATION CONFIRM message has not been received.

#### 8.1.6.6 T304 timeout

Upon expiry of timer T304, the UE shall check the value of V304 and:

- 1> if V304 is smaller than or equal to N304:
  - 2> prior to retransmitting the UE CAPABILITY INFORMATION message:
    - 3> if the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started":
      - 4> include the same IEs as in the last unsuccessful attempt of this message, except for the IE "Integrity check info", which is set as specified in subclause 8.5.10.
    - 3> else:

- 4> include the same IEs as in the last unsuccessful attempt of this message.
- 2> send the UE CAPABILITY INFORMATION message on signalling radio bearer RB2;
- 2> restart timer T304;
- 2> increment counter V304.
- 1> if V304 is greater than N304:
  - 2> initiate the Cell update procedure as specified in subclause 8.3.1, using the cause "Radio link failure".

# 8.1.7 UE capability enquiry

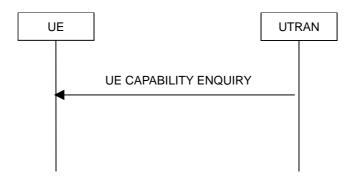


Figure 8.1.7-1: UE capability enquiry procedure, normal flow

#### 8.1.7.1 General

The UE capability enquiry can be used to request the UE to transmit its capability information related to any radio access network that is supported by the UE.

#### 8.1.7.2 Initiation

The UE capability enquiry procedure is initiated by the UTRAN by transmitting a UE CAPABILITY ENQUIRY message on the DCCH using UM or AM RLC.

## 8.1.7.3 Reception of a UE CAPABILITY ENQUIRY message by the UE

Upon reception of a UE CAPABILITY ENQUIRY message, the UE shall act on the received information elements as specified in subclause 8.6 and initiate the transmission of UE capability information procedure, which is specified in subclause 8.1.6.

## 8.1.7.4 Invalid UE CAPABILITY ENQUIRY message

If the UE receives a UE CAPABILITY ENQUIRY message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to UE CAPABILITY ENQUIRY; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the UE CAPABILITY ENQUIRY message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL ERROR INFORMATION;

- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
  - 2> continue with the ongoing processes and procedures as if the invalid UE CAPABILITY ENQUIRY message has not been received.

## 8.1.8 Initial Direct transfer

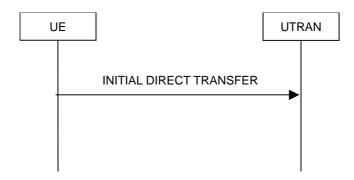


Figure 8.1.8-1: Initial Direct transfer in the uplink, normal flow

#### 8.1.8.1 General

The initial direct transfer procedure is used in the uplink to establish a signalling connection. It is also used to carry an initial upper layer (NAS) message over the radio interface.

#### 8.1.8.2 Initiation of Initial direct transfer procedure in the UE

In the UE, the initial direct transfer procedure shall be initiated, when the upper layers request establishment of a signalling connection. This request also includes a request for the transfer of a NAS message.

Upon initiation of the initial direct transfer procedure the UE shall:

1> set the variable ESTABLISHMENT\_CAUSE to the cause for establishment indicated by upper layers.

Upon initiation of the initial direct transfer procedure when the UE is in idle mode, the UE shall:

1> perform an RRC connection establishment procedure, according to subclause 8.1.3;

NOTE: If an RRC connection establishment is ongoing, this procedure continues unchanged, i.e. it is not interrupted.

- 1> if the RRC connection establishment procedure was not successful:
  - 2> if the establishment cause for the failed RRC connection establishment was set to "MBMS reception" and a different cause value is stored in the variable "ESTABLISHMENT\_CAUSE":
    - 3> UE-AS (RRC) initiates a new RRC connection establishment procedure, using the establishment cause as contained in the variable ESTABLISHMENT\_CAUSE.
  - 2> otherwise:
    - 3> indicate failure to establish the signalling connection to upper layers and end the procedure.
- 1> when the RRC connection establishment procedure is completed successfully:
  - 2> continue with the initial direct transfer procedure as below.

Upon initiation of the initial direct transfer procedure when the UE is in CELL\_PCH or URA\_PCH state, the UE shall:

- 1> if variable H\_RNTI and variable C\_RNTI are set:
  - 2> continue with the initial direct transfer procedure as below.
- 1> else:

- 2> perform a cell update procedure, according to subclause 8.3.1, using the cause "uplink data transmission";
- 2> when the cell update procedure completed successfully:
  - 3> continue with the initial direct transfer procedure as below.

#### The UE shall, in the INITIAL DIRECT TRANSFER message:

- 1> set the IE "NAS message" as received from upper layers; and
- 1> set the IE "CN domain identity" as indicated by the upper layers; and
- 1> set the IE "Intra Domain NAS Node Selector" as follows:
  - 2> derive the IE "Intra Domain NAS Node Selector" from TMSI/PMTSI, IMSI, or IMEI; and
  - 2> provide the coding of the IE "Intra Domain NAS Node Selector" according to the following priorities:
    - 1. derive the routing parameter for IDNNS from TMSI (CS domain) or PTMSI (PS domain) whenever a valid TMSI/PTMSI is available:
    - 2. base the routing parameter for IDNNS on IMSI when no valid TMSI/PTMSI is available;
    - 3. base the routing parameter for IDNNS on IMEI only if no (U)SIM is inserted in the UE.
- 1> if the UE, on the existing RRC connection, has received a dedicated RRC message containing the IE "Primary PLMN Identity" in the IE "CN Information Info":
  - 2> set the IE "PLMN identity" in the INITIAL DIRECT TRANSFER message to the latest PLMN information received via dedicated RRC signalling. If NAS has indicated the PLMN towards which a signalling connection is requested, and this PLMN is not in agreement with the latest PLMN information received via dedicated RRC signalling, then the initial direct transfer procedure shall be aborted, and NAS shall be informed.
- 1> if the UE, on the existing RRC connection, has not received a dedicated RRC message containing the IE "CN Information Info", and if the IE "Multiple PLMN List" was broadcast in the cell where the current RRC connection was established:
  - 2> set the IE "PLMN identity" in the INITIAL DIRECT TRANSFER message to the PLMN chosen by higher layers [5, 25] amongst the PLMNs in the IE "Multiple PLMN List" broadcast in the cell where the RRC connection was established.
- 1> if the IE "Activated service list" within variable MBMS\_ACTIVATED\_SERVICES includes one or more MBMS services with the IE "Service type" set to "Multicast" and;
- 1> if the IE "CN domain identity" as indicated by the upper layers is set to "CS domain" and;
- 1> if the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS does not include the CN domain identity 'PS domain':
  - 2> include the IE "MBMS joined information";
  - 2> include the IE "P-TMSI" within the IE "MBMS joined information" if a valid PTMSI is available.
- 1> if the UE is in CELL\_FACH state and the IE "CN domain identity" as indicated by the upper layers is set to "CS domain":
  - 2> if the value of the variable ESTABLISHMENT\_CAUSE is set to "Originating Conversational Call" or "Emergency Call":
    - 3> set the value of the IE "Call type" to "speech", "video" or "other" according to the call being initiated.
- 1> if the variable ESTABLISHMENT\_CAUSE is initialised:
  - 2> set the IE "Establishment cause" to the value of the variable ESTABLISHMENT CAUSE;
  - 2> clear the variable ESTABLISHMENT\_CAUSE.

- 1> calculate the START according to subclause 8.5.9 for the CN domain as set in the IE "CN Domain Identity"; and
- 1> include the calculated START value for that CN domain in the IE "START".

#### The UE shall:

- 1> transmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3:
- 1> when the INITIAL DIRECT TRANSFER message has been submitted to lower layers for transmission:
  - 2> confirm the establishment of a signalling connection to upper layers; and
  - 2> add the signalling connection with the identity indicated by the IE "CN domain identity" in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS.
- 1> when the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC:
  - 2> the procedure ends.

When not stated otherwise elsewhere, the UE may also initiate the initial direct transfer procedure when another procedure is ongoing, and in that case the state of the latter procedure shall not be affected.

A new signalling connection request may be received from upper layers during transition to idle mode. In those cases, from the time of the indication of release to upper layers until the UE has entered idle mode, any such upper layer request to establish a new signalling connection shall be queued. This request shall be processed after the UE has entered idle mode.

#### 8.1.8.2a RLC re-establishment or inter-RAT change

If a re-establishment of the transmitting side of the RLC entity on signalling radio bearer RB3 occurs before the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC, the UE shall:

1> retransmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3.

If an Inter-RAT handover from UTRAN procedure occurs before the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC, for messages with the IE "CN domain identity" set to "CS domain", the UE shall:

1> retransmit the NAS message as specified in subclause 8.3.7.4.

## 8.1.8.2ab Inter-RAT handover from UTRAN to GERAN *lu mode*

If an Inter-RAT handover from UTRAN to GERAN *Iu mode* occurs before the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC, for messages for all CN domains, the UE shall:

1> retransmit the NAS message as specified in subclause 8.3.7.4.

#### 8.1.8.2b Abortion of signalling connection establishment

If the UE receives a request from upper layers to release (abort) the signalling connection for the CN domain for which the initial direct transfer procedure is ongoing, the UE shall:

- 1> if the UE has not yet entered UTRA RRC connected mode:
  - 2> abort the RRC connection establishment procedure as specified in subclause 8.1.3;

the procedure ends.

# 8.1.8.3 Reception of INITIAL DIRECT TRANSFER message by the UTRAN

On reception of the INITIAL DIRECT TRANSFER message the NAS message should be routed using the IE "CN Domain Identity". UTRAN may also use the IE "Intra Domain NAS Node Selector" and the IE "PLMN identity" for routing among the CN nodes for the addressed CN domain.

If no signalling connection exists towards the chosen node, then a signalling connection is established.

When the UTRAN receives an INITIAL DIRECT TRANSFER message, it shall not affect the state of any other ongoing RRC procedures, when not stated otherwise elsewhere.

The UTRAN should:

1> set the START value for the CN domain indicated in the IE "CN domain identity" to the value of the IE "START".

#### 8.1.9 Downlink Direct transfer



Figure 8.1.9-1: Downlink Direct transfer, normal flow

#### 8.1.9.1 General

The downlink direct transfer procedure is used in the downlink direction to carry upper layer (NAS) messages over the radio interface.

#### 8.1.9.2 Initiation of downlink direct transfer procedure in the UTRAN

In the UTRAN, the direct transfer procedure is initiated when the upper layers request the transfer of a NAS message after the initial signalling connection is established. The UTRAN may also initiate the downlink direct transfer procedure when another RRC procedure is ongoing, and in that case the state of the latter procedure shall not be affected. The UTRAN shall transmit the DOWNLINK DIRECT TRANSFER message on the downlink DCCH using AM RLC on signalling radio bearer RB3 or signalling radio bearer RB4. The UTRAN should:

- 1> if upper layers indicate "low priority" for this message:
  - 2> select signalling radio bearer RB4, if available. Specifically, for a GSM-MAP based CN, signalling radio bearer RB4 should, if available, be selected when "SAPI 3" is requested;
  - 2> select signalling radio bearer RB3 when signalling radio bearer RB4 is not available.
- 1> if upper layers indicate "high priority" for this message:
  - 2> select signalling radio bearer RB3. Specifically, for a GSM-MAP based CN, signalling radio bearer RB3 should be selected when "SAPI 0" is requested.

The UTRAN sets the IE "CN Domain Identity" to indicate, which CN domain the NAS message is originated from.

#### 8.1.9.3 Reception of a DOWNLINK DIRECT TRANSFER message by the UE

Upon reception of the DOWNLINK DIRECT TRANSFER message, the UE RRC shall, using the IE "CN Domain Identity", route the contents of the IE "NAS message" and the value of the IE"CN Domain Identity" to upper layers.

The UE shall clear the entry for the DOWNLINK DIRECT TRANSFER message in the table "Accepted transactions" in the variable TRANSACTIONS.

When the UE receives a DOWNLINK DIRECT TRANSFER message, it shall not affect the state of any other ongoing RRC procedures when not stated otherwise elsewhere.

#### 8.1.9.3a No signalling connection exists

If the UE receives a DOWNLINK DIRECT TRANSFER message, and the signalling connection identified with the IE "CN domain identity" does not exist according to the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS, the UE shall:

- 1> ignore the content of the DOWNLINK DIRECT TRANSFER message;
- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state".

When the RRC STATUS message has been submitted to lower layers for transmission, the UE shall:

1> continue with any ongoing processes and procedures as if the DOWNLINK DIRECT TRANSFER message has not been received.

#### 8.1.9.4 Invalid DOWNLINK DIRECT TRANSFER message

If the UE receives a DOWNLINK DIRECT TRANSFER message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to DOWNLINK DIRECT TRANSFER; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the DOWNLINK DIRECT TRANSFER message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.

When the RRC STATUS message has been submitted to lower layers for transmission, the UE shall:

1> continue with any ongoing processes and procedures as if the invalid DOWNLINK DIRECT TRANSFER message has not been received.

# 8.1.10 Uplink Direct transfer

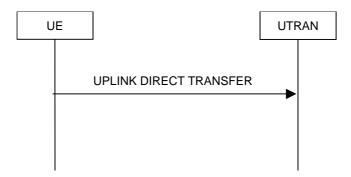


Figure 8.1.10-1: Uplink Direct transfer, normal flow

#### 8.1.10.1 General

The uplink direct transfer procedure is used in the uplink direction to carry all subsequent upper layer (NAS) messages over the radio interface belonging to a signalling connection.

#### 8.1.10.2 Initiation of uplink direct transfer procedure in the UE

In the UE, the uplink direct transfer procedure shall be initiated when the upper layers request a transfer of a NAS message on an existing signalling connection. When not stated otherwise elsewhere, the UE may initiate the uplink direct transfer procedure when another procedure is ongoing, and in that case the state of the latter procedure shall not be affected.

Upon initiation of the uplink direct transfer procedure in CELL\_PCH or URA\_PCH state, the UE shall:

- 1> if variable H\_RNTI and variable C\_RNTI are set:
  - 2> continue with the uplink direct transfer procedure as below.
- 1> else:
  - 2> perform a cell update procedure, according to subclause 8.3.1, using the cause "uplink data transmission";
  - 2> when the cell update procedure has been completed successfully:
    - 3> continue with the uplink direct transfer procedure as below.

The UE shall transmit the UPLINK DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3 or signalling radio bearer RB4. The UE shall:

- 1> if upper layers indicate "low priority" for this message:
  - 2> select signalling radio bearer RB4, if available. Specifically, for a GSM-MAP based CN, signalling radio bearer RB4 shall, if available, be selected when "SAPI 3" is requested;
  - 2> select signalling radio bearer RB3 when signalling radio bearer RB4 is not available;
- 1> if upper layers indicate "high priority" for this message:
  - 2> select signalling radio bearer RB3. Specifically, for a GSM-MAP based CN, signalling radio bearer RB3 shall be selected when "SAPI 0" is requested.

The UE shall set the IE "NAS message" as received from upper layers and set the IE "CN domain identity" as indicated by the upper layers.

When the successful delivery of the UPLINK DIRECT TRANSFER message has been confirmed by RLC the procedure ends.

#### 8.1.10.2a RLC re-establishment or inter-RAT change

If signalling radio bearer RB n (where n equals to 3 or 4) was used when transmitting the UPLINK DIRECT TRANSFER message and a re-establishment of the transmitting side of the RLC entity on the same signalling radio bearer RB n occurs before the successful delivery of the UPLINK DIRECT TRANSFER message has been confirmed by RLC, the UE shall:

1> retransmit the UPLINK DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB n.

If an Inter-RAT handover from UTRAN procedure occurs before the successful delivery of the UPLINK DIRECT TRANSFER message has been confirmed by RLC, for messages with the IE "CN domain identity" set to "CS domain", the UE shall:

1> retransmit the NAS message as specified in subclause 8.3.7.4.

#### 8.1.10.2b Inter-RAT handover from UTRAN to GERAN *lu mode*

If an Inter-RAT handover from UTRAN to GERAN *Iu mode* occurs before the successful delivery of the UPLINK DIRECT TRANSFER message has been confirmed by RLC, for messages for all CN domains, the UE shall:

1> retransmit the NAS message as specified in subclause 8.3.7.4.

#### 8.1.10.3 Reception of UPLINK DIRECT TRANSFER message by the UTRAN

On reception of the UPLINK DIRECT TRANSFER message the NAS message should be routed using the value indicated in the IE "CN domain identity".

When the UTRAN receives an UPLINK DIRECT TRANSFER message, it shall not affect the state of any other ongoing RRC procedures, when not stated otherwise elsewhere.

# 8.1.11 UE dedicated paging

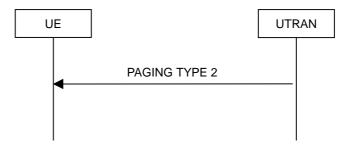


Figure 8.1.11-1: UE dedicated paging

#### 8.1.11.1 General

This procedure is used to transmit dedicated paging information to one UE in connected mode in CELL\_DCH , CELL\_FACH or CELL\_PCH (FDD only) state. Upper layers in the network may request initiation of paging.

#### 8.1.11.2 Initiation

For a UE in CELL\_DCH, CELL\_FACH or CELL\_PCH (FDD only) state, UTRAN initiates the procedure by transmitting a PAGING TYPE 2 message on the DCCH using AM RLC. When not stated otherwise elsewhere, the UTRAN may initiate the UE dedicated paging procedure also when another RRC procedure is ongoing, and in that case the state of the latter procedure shall not be affected.

UTRAN should set the IE "Paging cause" to the cause for paging received from upper layers. If no cause for paging is received from upper layers, UTRAN should set the value "Terminating – cause unknown".

# 8.1.11.3 Reception of a PAGING TYPE 2 message by the UE

When the UE receives a PAGING TYPE 2 message, it shall not affect the state of any other ongoing RRC procedures, when not stated otherwise elsewhere.

The UE shall:

- 1> indicate reception of paging; and
- 1> forward the IE "Paging cause" and the IE "Paging record type identifier" to upper layers.

The UE shall:

1> clear the entry for the PAGING TYPE 2 message in the table "Accepted transactions" in the variable TRANSACTIONS.

#### 8.1.11.4 Invalid PAGING TYPE 2 message

If the UE receives a PAGING TYPE 2 message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to PAGING TYPE 2; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the PAGING TYPE 2 message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION;
- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid PAGING TYPE 2 message has not been received.

# 8.1.12 Security mode control

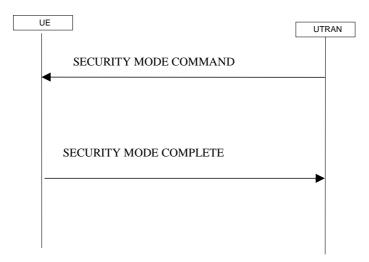


Figure 8.1.12-1: Security mode control procedure

#### 8.1.12.1 General

The purpose of this procedure is to trigger the start of ciphering or to command the restart of the ciphering with a new ciphering configuration, for the radio bearers of one CN domain and for all signalling radio bearers.

It is also used to start integrity protection or to modify the integrity protection configuration for all signalling radio bearers.

#### 8.1.12.2 Initiation

#### 8.1.12.2.1 Ciphering configuration change

To start/restart ciphering, UTRAN sends a SECURITY MODE COMMAND message on the downlink DCCH in AM RLC using the most recent ciphering configuration. If no such ciphering configuration exists then the SECURITY MODE COMMAND is not ciphered. UTRAN should not transmit a SECURITY MODE COMMAND to signal a change in ciphering algorithm.

When configuring ciphering, UTRAN should ensure that the UE needs to store at most two different ciphering configurations (keyset and algorithm) per CN domain, in total over all radio bearers at any given time. For signalling radio bearers the total number of ciphering configurations that need to be stored is at most three. Prior to sending the SECURITY MODE COMMAND, for the CN domain indicated in the IE "CN domain identity" in the SECURITY MODE COMMAND, UTRAN should:

- 1> suspend all radio bearers using RLC-AM or RLC-UM and all signalling radio bearers using RLC-AM or RLC-UM, except the signalling radio bearer used to send the SECURITY MODE COMMAND message on the downlink DCCH in RLC-AM, and except signalling radio bearer RB0, according to the following:
  - 2> not transmit RLC PDUs with sequence number greater than or equal to the number in IE "Radio bearer downlink ciphering activation time info" on all suspended radio bearers and all suspended signalling radio bearers.
- 1> set, for the signalling radio bearer used to send the SECURITY MODE COMMAND, the "RLC sequence number" in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info", at which time the new ciphering configuration shall be applied;
- NOTE: The UTRAN should avoid the situation that the UE is aware of more than one pending downlink ciphering activation times for SRB2. In such a case the UE behaviour is unspecified.
- 1> if a transparent mode radio bearer for this CN domain exists:
  - 2> include the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info", at which time the new ciphering configuration shall be applied and specify a CFN value for this IE that is a multiple of 8 frames (CFN mod 8 = 0).
- NOTE: UTRAN should chose the value for the IE "Ciphering activation time for DPCH" such that the new ciphering configuration will occur after all the pending ciphering activation times have been reached for the transparent mode radio bearers of this CN domain.
- 1> consider a ciphering activation time in downlink to be pending until the RLC sequence number of the next RLC PDU to be transmitted for the first time is equal to or larger than the selected activation time;
- 1> set, for each suspended radio bearer and signalling radio bearer that has no pending ciphering activation time set by a previous security mode control procedure, an "RLC sequence number" in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info", at which time the new ciphering configuration shall be applied;
- 1> set, for each suspended radio bearer and signalling radio bearer that has a pending ciphering activation time set by a previous security mode control procedure, the "RLC sequence number" in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info" to the value used in the previous security mode control procedure, at which time the latest ciphering configuration shall be applied;
- 1> if Integrity protection has already been started for the UE:

- 2> if for the CN domain indicated in the IE "CN domain identity" in the SECURITY MODE COMMAND, a new security key set (new ciphering and integrity protection keys) has been received from upper layers since the transmission of the last SECURITY MODE COMMAND message for that CN domain:
  - 3> include the IE "Integrity protection mode info" in the SECURITY MODE COMMAND.
- 2> if the IE "CN domain identity" in the SECURITY MODE COMMAND is different from the IE "CN domain identity" that was sent in the previous SECURITY MODE COMMAND message to the UE:
  - 3> include the IE "Integrity protection mode info" in the SECURITY MODE COMMAND.
- 1> transmit the SECURITY MODE COMMAND message on RB2.

#### 8.1.12.2.2 Integrity protection configuration change

To start or modify integrity protection, UTRAN sends a SECURITY MODE COMMAND message on the downlink DCCH in AM RLC using the new integrity protection configuration. UTRAN should not "modify" integrity protection for a CN domain to which a SECURITY MODE COMMAND configuring integrity protection has been previously sent for an ongoing signalling connection unless the application of new integrity keys needs to be signalled to the UE. UTRAN should not transmit a SECURITY MODE COMMAND to signal a change in integrity protection algorithm.

In case of Inter-RAT handover to UTRAN, after the reception of the HANDOVER TO UTRAN COMPLETE message and a key set is received, UTRAN should transmit a SECURITY MODE COMMAND message containing IE "Integrity protection mode info" in order to initiate integrity protection with the integrity key of the key set used in the other RAT (see subclause 8.3.6.3).

When configuring Integrity protection, UTRAN should:

- 1> ensure that the UE needs to store at most three different Integrity protection configurations (keysets) at any given time. This includes the total number of Integrity protection configurations for all signalling radio bearers;
- 1> if Ciphering has already been started for the UE for the CN domain to be set in the IE "CN domain identity" in the SECURITY MODE COMMAND:
  - 2> if for the CN domain indicated in the IE "CN domain identity" in the SECURITY MODE COMMAND, a new security key set (new ciphering and integrity protection keys) has been received from upper layers since the transmission of the last SECURITY MODE COMMAND message for that CN domain:
    - 3> include the IE "Ciphering mode info" in the SECURITY MODE COMMAND.
- 1> if Ciphering has already been configured for the UE for a CN domain different from the CN domain to be set in the IE "CN domain identity" in the SECURITY MODE COMMAND:
  - 2> include the IE "Ciphering mode info" in the SECURITY MODE COMMAND.

Prior to sending the SECURITY MODE COMMAND, for the CN domain indicated in the IE "CN domain identity" in the SECURITY MODE COMMAND, UTRAN should:

- 1> if this is the first SECURITY MODE COMMAND sent for this RRC connection:
  - 2> if new keys have been received:
    - 3> initialise the hyper frame numbers as follows:
      - 4> set all bits of the hyper frame numbers of the COUNT-I values for all signalling radio bearers to zero.
  - 2> else (if new keys have not been received):
    - 3> use the value "START" in the most recently received IE "START list" or IE "START" that belongs to the CN domain indicated in the IE "CN domain identity" to initialise all hyper frame numbers of COUNT-I for all the signalling radio bearers by:
      - 4> setting the 20 most significant bits of the hyper frame numbers for all signalling radio bearers to the value "START" in the most recently received IE "START list" or IE "START" for that CN domain;
      - 4> setting the remaining bits of the hyper frame numbers equal to zero.

- 1> else (this is not the first SECURITY MODE COMMAND sent for this RRC connection):
  - 2> if new keys have been received:
    - 3> initialise the hyper frame number for COUNT-I for RB2 as follows:
      - 4> set all bits of the HFN of the COUNT-I value for RB2 to zero.
  - 2> if new keys have not been received:
    - 3> initialise the hyper frame number for COUNT-I for RB2 as follows:
      - 4> set the 20 most significant bits of the HFN of the downlink and uplink COUNT-I to the value of the most recently received IE "START" or IE "START list" for the CN domain to be set in the IE "CN Domain Identity";
      - 4> set the remaining bits of the HFN of the downlink and uplink COUNT-I to zero.
- 1> if the IE "Integrity protection mode command" has the value "Start":
  - 2> prohibit the transmission of signalling messages with any RRC SN on all signalling radio bearers, except RB2;
  - 2> set the FRESH value in the IE "Integrity protection initialisation number", included in the IE "Integrity protection mode info".
- 1> if the IE "Integrity protection mode command" has the value "Modify":
  - 2> for each signalling radio bearer RBn, except RB2:
    - 3> prohibit the transmission of signalling messages with RRC SN greater or equal to the RRC sequence number in entry for signalling radio bearer n in the "RRC message sequence number list" in the IE "Downlink integrity protection activation info", included in the IE "Integrity protection mode info".
  - 2> consider an integrity protection activation time in downlink to be pending until the selected activation time is equal to the next RRC sequence number to be used, which means that the last RRC message using the old integrity protection configuration has been submitted to lower layers;
  - 2> set, for each signalling radio bearer RBn, that has no pending integrity protection activation time set by a previous security mode control procedure, an RRC sequence number in entry for signalling radio bearer n in the "RRC message sequence number list" in the IE "Downlink integrity protection activation info", included in the IE "Integrity protection mode info", at which time the new integrity protection configuration shall be applied;
  - 2> set, for each signalling radio bearer RBn, that has a pending integrity protection activation time set by a previous security mode control procedure, the RRC sequence number in entry for signalling radio bearer n in the "RRC message sequence number list" in the IE "Downlink integrity protection activation info", included in the IE "Integrity protection mode info", to the value used in the previous security mode control procedure, at which time the latest integrity protection configuration shall be applied.
- 1> transmit the SECURITY MODE COMMAND message on RB2 using the new integrity protection configuration.
- NOTE1: In the case of re-initialisation of Integrity Protection at HFN wrap around, the network should take into account the UE actions as described in subclauses 8.5.10.1 and 8.5.10.2.
- NOTE2: After the SECURITY MODE COMMAND message is transmitted, the network should ensure that it can revert back to old integrity protection until it receives the SECURITY MODE COMPLETE message, to take into account the UE actions when security mode control procedure is unsuccessful. The network should also be aware that the UE may revert to old configuration when waiting for the acknowledgement from L2 for the SECURITY MODE COMPLETE message, and act accordingly.
- NOTE3: In the case of the first SECURITY MODE COMMAND message following an SRNS relocation, the network should set the IE "Downlink integrity protection activation info" for SRB3 and SRB4 to at least "the current downlink RRC sequence number +2". As a consequence, at least the first message sent on SRB3 and SRB4 by the Target RNC will use the old integrity protection configuration.

#### 8.1.12.3 Reception of SECURITY MODE COMMAND message by the UE

Upon reception of the SECURITY MODE COMMAND message, the UE shall:

- 1> if neither IE "Ciphering mode info" nor IE "Integrity protection mode info" is included in the SECURITY MODE COMMAND:
  - 2> set the variable INVALID CONFIGURATION to TRUE.
- 1> if the IE "Security capability" is the same as indicated by variable UE\_CAPABILITY\_TRANSFERRED, and the IE "GSM security capability" (if included in the SECURITY MODE COMMAND) is the same as indicated by the variable UE\_CAPABILITY\_TRANSFERRED:
  - 2> set the variable LATEST\_CONFIGURED\_CN\_DOMAIN equal to the IE "CN domain identity";
  - 2> set the IE "Status" in the variable SECURITY\_MODIFICATION for the CN domain indicated in the IE "CN domain identity" in the received SECURITY MODE COMMAND to the value "Affected";
  - 2> set the IE "Status" in the variable SECURITY\_MODIFICATION for all CN domains other than the CN domain indicated in the IE "CN domain identity" to "Not affected";
  - 2> set the IE "RRC transaction identifier" in the SECURITY MODE COMPLETE message to the value of "RRC transaction identifier" in the entry for the SECURITY MODE COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> if the SECURITY MODE COMMAND message contained the IE "Ciphering mode info":
    - 3> perform the actions as specified in subclause 8.6.3.4.
  - 2> if the SECURITY MODE COMMAND message contained the IE "Integrity protection mode info":
    - 3> perform the actions as specified in subclause 8.6.3.5.
- 1> prior to sending the SECURITY MODE COMPLETE message:
  - 2> use the old ciphering configuration for this message;
  - 2> if the SECURITY MODE COMMAND message contained the IE "Ciphering mode info":
    - 3> include and set the IE "Radio bearer uplink ciphering activation time info" to the value of the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
    - 3> for each radio bearer and signalling radio bearer that belongs to the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN:
      - 4> start or continue incrementing the COUNT-C values for all RLC-AM and RLC-UM signalling radio bearers at the ciphering activation time as specified in the procedure;
      - 4> start or continue incrementing the COUNT-C values common for all transparent mode radio bearers for this CN domain at the ciphering activation time as specified in the procedure;
      - 4> continue incrementing the COUNT-C values for all RLC-AM and RLC-UM radio bearers.
    - 3> if no new security key set (new ciphering and integrity protection keys) has been received from the upper layers [40] for the CN domain as indicated in the variable LATEST CONFIGURED CN DOMAIN:
      - 4> for ciphering on signalling radio bearers using RLC-AM and RLC-UM in the downlink, at the RLC sequence number indicated in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info" included in the SECURITY MODE COMMAND, for each signalling radio bearer:
        - 5> set the 20 most significant bits of the HFN component of the downlink COUNT-C to the value "START" in the most recently transmitted IE "START list" or IE "START", at the reception of the SECURITY MODE COMMAND, that belongs to the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;

- 5> set the remaining bits of the hyper frame numbers to zero.
- 3> if new keys have been received:
  - 4> perform the actions in subclause 8.1.12.3.1.
- 2> if the SECURITY MODE COMMAND message contained the IE "Integrity protection mode info":
  - 3> include and set the IE "Uplink integrity protection activation info" to the value of the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO for each signalling radio bearer;
  - 3> if no new security key set (new ciphering and integrity protection keys) has been received from the upper layers [40] for the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN, for RB2:
    - 4> in the downlink, for the received SECURITY MODE COMMAND message:
      - 5> set the 20 most significant bits of the IE "Downlink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the downlink COUNT-I to the value "START" in the most recently transmitted IE "START list" or IE "START", at the reception of the SECURITY MODE COMMAND, that belongs to the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
      - 5> set the remaining bits of the IE "Downlink RRC HFN" to zero.
    - 4> in the uplink, for the transmitted response message, SECURITY MODE COMPLETE:
      - 5> set the 20 most significant bits of the IE "Uplink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the uplink COUNT-I to the value "START" in the most recently transmitted IE "START list" or IE "START", at the reception of the SECURITY MODE COMMAND, that belongs to the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
      - 5> set the remaining bits of the IE "Uplink RRC HFN" to zero.
  - 3> if no new security key set (new ciphering and integrity protection keys) has been received from the upper layers [40] for the CN domain indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN, for each signalling radio bearer other than RB2:
    - 4> if the IE "Integrity protection mode command" has the value "start":
      - 5> in the downlink, for this signalling radio bearer:
        - 6> set the 20 most significant bits of IE "Downlink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the downlink COUNT-I to the value START transmitted in the most recently transmitted IE "START list" or IE "START", at the reception of the SECURITY MODE COMMAND, that belongs to the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
        - 6> set the remaining bits of the IE "Downlink RRC HFN" in the variable INTEGRITY PROTECTION INFO of the downlink COUNT-I to zero;
    - 4> else:
      - 5> in the downlink, for the first message for which the RRC sequence number in a received RRC message for this signalling radio bearer is equal to or greater than the activation time as indicated in IE "Downlink integrity protection activation info" as included in the IE "Integrity protection mode info", for this signalling radio bearer:
        - 6> set the 20 most significant bits of the IE "Downlink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the downlink COUNT-I to the value "START" in the most recently transmitted IE "START list" or IE "START", at the reception of the SECURITY MODE COMMAND, that belongs to the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
        - 6> set the remaining bits of the IE "Downlink RRC HFN" to zero.

- 3> if new keys have been received:
  - 4> perform the actions in subclause 8.1.12.3.1.
- 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted SECURITY MODE COMPLETE message;
- 2> transmit the SECURITY MODE COMPLETE message on RB2.
- NOTE: After submission of the SECURITY MODE COMPLETE message to the lower layers, the UE should accept messages received in the DL which require the new security configuration to be applied on them. If the received message is successfully integrity checked, the UE should not discard the message due to lack of completion of the security procedure, caused by the successful delivery of the SECURITY MODE COMPLETE not having yet been confirmed by lower layers, unless the security configuration to be applied has been aborted and the message received requires integrity protection [5].
- 1> when the successful delivery of the SECURITY MODE COMPLETE message has been confirmed by RLC:
  - 2> if the SECURITY MODE COMMAND message contained the IE "Ciphering mode info":
    - 3> if no new security key set (new ciphering and integrity protection keys) has been received from the upper layers [40] for the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN:
      - 4> for ciphering on signalling radio bearers using RLC-AM and RLC-UM in the uplink, at the RLC sequence number indicated in IE "Radio bearer uplink ciphering activation time info" included in the SECURITY MODE COMPLETE, for each signalling radio bearer:
        - 5> set the 20 most significant bits of the HFN component of the uplink COUNT-C to the value "START" in the most recently transmitted IE "START list" or IE "START", at the reception of the SECURITY MODE COMMAND, that belongs to the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
        - 5> set the remaining bits of the hyper frame numbers to zero.
    - 3> if new keys have been received:
      - 4> perform the actions in subclause 8.1.12.3.1.
    - 3> resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;
    - 3> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE; and
    - 3> clear the variable RB UPLINK CIPHERING ACTIVATION TIME INFO.
  - 2> if the SECURITY MODE COMMAND message contained the IE "Integrity protection mode info":
    - 3> if no new security key set (new ciphering and integrity protection keys) has been received from the upper layers [40] for the CN domain indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN, for each signalling radio bearer other than RB2:
      - 4> if the IE "Integrity protection mode command" has the value "start":
        - 5> in the uplink, for this signalling radio bearer:
          - 6> set the 20 most significant bits of IE "Uplink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the uplink COUNT-I to the value START transmitted in the most recently transmitted IE "START list" or IE "START", at the reception of the SECURITY MODE COMMAND, that belongs to the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
          - 6> set the remaining bits of the IE "Uplink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the uplink COUNT-I to zero.

4> else:

- 5> in the uplink, for the first transmitted RRC message for this signalling radio bearer with RRC sequence number equal to the activation time as indicated in IE "Uplink integrity protection activation info" included in the transmitted SECURITY MODE COMPLETE, for this signalling radio bearer:
  - 6> set the 20 most significant bits of the IE "Uplink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the uplink COUNT-I to the value "START" in the most recently transmitted IE "START list" or IE "START", at the reception of the SECURITY MODE COMMAND, that belongs to the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
  - 6> set the remaining bits of the IE "Uplink RRC HFN" to zero.
- 3> if new keys have been received:
  - 4> perform the actions in subclause 8.1.12.3.1.
- 3> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;
- 3> set "Uplink RRC Message sequence number" for signalling radio bearer RB0 in the variable INTEGRITY\_PROTECTION\_INFO to a value such that next RRC message to be sent on uplink RB0 will use the new integrity protection configuration and the "RRC Message sequence number" in the IE "Integrity check info" in the next RRC message will equal to the activation time for RB0 as indicated in IE "Uplink integrity protection activation info" included in the transmitted SECURITY MODE COMPLETE;
- 3> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to FALSE; and
- 3> clear the variable INTEGRITY PROTECTION ACTIVATION INFO.
- 2> clear the variable SECURITY\_MODIFICATION;
- 2> notify upper layers upon change of the security configuration;
- 2> and the procedure ends.
- 1> if the IE "Security capability" is not the same as indicated by the variable UE\_CAPABILITY\_TRANSFERRED, or the IE "GSM security capability" (if included in the SECURITY MODE COMMAND) is not the same as indicated by the variable UE\_CAPABILITY\_TRANSFERRED, or if the IE "GSM security capability" is not included in the SECURITY MODE COMMAND and is included in the variable UE\_CAPABILITY\_TRANSFERRED:
  - 2> release all its radio resources;
  - 2> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
  - 2> clear the variable ESTABLISHED\_RABS;
  - 2> clear the variable SECURITY\_MODIFICATION;
  - 2> enter idle mode;
  - 2> perform actions when entering idle mode as specified in subclause 8.5.2;
  - 2> and the procedure ends.

#### 8.1.12.3.1 New ciphering and integrity protection keys

NOTE: The actions in this subclause are to be performed only if the new keys were received for an ongoing RRC connection while in UTRA.

If a new security key set (new ciphering and integrity protection keys) has been received from the upper layers [40] for the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN, the UE shall:

- 1> set the START value for the CN domain indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN to zero:
- 1> if the SECURITY MODE COMMAND message contained the IE "Integrity protection mode info":
  - 2> for integrity protection in the downlink on each signalling radio bearer except RB2:
    - 3> if IE "Integrity protection mode command" has the value "start":
      - 4> for the first received message on this signalling radio bearer:
        - 5> start using the new integrity key;
        - 5> for this signalling radio bearer:
          - 6> set the IE "Downlink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the downlink COUNT-I to zero.

#### 3> else:

- 4> for the first message for which the RRC sequence number in a received RRC message for this signalling radio bearer is equal to or greater than the activation time as indicated in IE "Downlink integrity protection activation info" as included in the IE "Integrity protection mode info":
  - 5> start using the new integrity key;
  - 5> for this signalling radio bearer:
    - 6> set the IE "Downlink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the downlink COUNT-I to zero.
- 2> for integrity protection in the uplink on each signalling radio bearer except RB2:
  - 3> for the first message for which the RRC sequence number in a to be transmitted RRC message for this signalling radio bearer is equal to the activation time as indicated in IE "Uplink integrity protection activation info" included in the transmitted SECURITY MODE COMPLETE message:
    - 4> start using the new integrity key;
    - 4> for this signalling radio bearer:
      - 5> set the IE "Uplink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the uplink COUNT-I to zero.
- 2> for integrity protection in the downlink on signalling radio bearer RB2:
  - 3> at the received SECURITY MODECOMMAND:
    - 4> start using the new integrity key;
    - 4> set the IE "Downlink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the downlink COUNT-I to zero.
- 2> for integrity protection in the uplink on signalling radio bearer RB2 :
  - 3> at the transmitted SECURITY MODE COMPLETE:
    - 4> start using the new integrity key;
    - 4> set the IE "Uplink RRC HFN" in the variable INTEGRITY\_PROTECTION\_INFO of the uplink COUNT-I to zero.
- 1> if the SECURITY MODE COMMAND message contained the IE "Ciphering mode info":

- 2> for each signalling radio bearer and for each radio bearer for the CN domain indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN:
  - 3> if the IE "Status" in the variable CIPHERING\_STATUS has the value "Started" for this CN domain, then for ciphering on radio bearers using RLC-TM:
    - 4> at the CFN as indicated in the IE "Ciphering activation time for DPCH" in the IE "Ciphering mode info":
      - 5> start using the new key in uplink and downlink;
      - 5> set the HFN component of the COUNT-C to zero.
  - 3> if the IE "Status" in the variable CIPHERING\_STATUS has the value "Started" for this CN domain, then for ciphering on radio bearers and signalling radio bearers using RLC-AM and RLC-UM:
    - 4> in the downlink, at the RLC sequence number indicated in IE "Radio bearer downlink ciphering activation time info" in the IE "Ciphering mode info":
      - 5> start using the new key;
      - 5> set the HFN component of the downlink COUNT-C to zero.
    - 4> in the uplink, at the RLC sequence number indicated in IE "Radio bearer uplink ciphering activation time info":
      - 5> start using the new key;
      - 5> set the HFN component of the uplink COUNT-C to zero.
- 1> consider the value of the latest transmitted START value to be zero.

#### 8.1.12.4 Void

#### 8.1.12.4a Incompatible simultaneous security reconfiguration

If the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION becomes set to TRUE of the received SECURITY MODE COMMAND message, the UE shall:

- 1> transmit a SECURITY MODE FAILURE message on the uplink DCCH using AM RLC, using the ciphering and integrity protection configurations prior to the reception of this SECURITY MODE COMMAND;
- 1> set the IE "RRC transaction identifier" in the SECURITY MODE FAILURE message to the value of "RRC transaction identifier" in the entry for the SECURITY MODE COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> set the IE "failure cause" to the cause value "incompatible simultaneous reconfiguration";
- 1> when the response message has been submitted to lower layers for transmission:
  - 2> set the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION to FALSE;
  - 2> continue with any ongoing processes and procedures as if the invalid SECURITY MODE COMMAND message has not been received;
  - 2> only accept a message on SRB 2, with a COUNT-I that:
    - 3> is higher than the COUNT-I used prior to receiving the SECURITY MODE COMMAND message incremented by one; and
    - 3> does not take into account the HFN from the received SECURITY MODE COMMAND message.

2> and the procedure ends.

#### 8.1.12.4b Cell update procedure during security reconfiguration

If:

- a cell update procedure according to subclause 8.3.1 is initiated; and
- the received SECURITY MODE COMMAND message causes either,
  - the IE "Reconfiguration" in the variable CIPHERING\_STATUS to be set to TRUE; and/or
  - the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to be set to TRUE:

#### the UE shall:

- 1> abort the ongoing integrity and/or ciphering reconfiguration;
- 1> resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;
- 1> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;
- 1> when the CELL UPDATE message has been submitted to lower layers for transmission:
  - 2> if the SECURITY MODE COMMAND message contained the IE "Ciphering mode info":
    - 3> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE; and
    - 3> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> if the SECURITY MODE COMMAND message contained the IE "Integrity protection mode info":
    - 3> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to FALSE; and
    - 3> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.
  - 2> continue with any ongoing processes and procedures as if the SECURITY MODE COMMAND message has not been received;
  - 2> only accept a message on SRB 2, with a COUNT-I that:
    - 3> is higher than the COUNT-I used prior to receiving the SECURITY MODE COMMAND message incremented by one; and
    - 3> does not take into account the HFN from the received SECURITY MODE COMMAND message.
  - 2> if the UE has already submitted the SECURITY MODE COMPLETE message, use a COUNT-I value for transmission of the next message on SRB2 as stated below:
    - 3> take the COUNT-I used prior to the transmission of the SECURITY MODE COMPLETE message;
    - 3> increment that COUNT-I with 2;
    - 3> apply that COUNT-I on the next message to transmit.
  - 2> clear the variable SECURITY\_MODIFICATION;
  - 2> the procedure ends.

#### 8.1.12.4c Invalid configuration

If the variable INVALID\_CONFIGURATION is set to TRUE due to the received SECURITY MODE COMMAND message, the UE shall:

1> transmit a SECURITY MODE FAILURE message on the DCCH using AM RLC after setting the IEs as specified below:

- 2> set the IE "RRC transaction identifier" in the SECURITY MODE FAILURE message to the value of "RRC transaction identifier" in the entry for the SECURITY MODE COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 2> clear that entry;
- 2> set the IE "failure cause" to the cause value "invalid configuration".
- 1> when the response message has been submitted to lower layers for transmission:
  - 2> set the variable INVALID\_CONFIGURATION to FALSE;
  - 2> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE;
  - 2> continue with any ongoing processes and procedures as if the invalid SECURITY MODE COMMAND message has not been received;
  - 2> only accept a message on SRB 2, with a COUNT-I that:
    - 3> is higher than the COUNT-I used prior to receiving the SECURITY MODE COMMAND message incremented by one; and
    - 3> does not take into account the HFN from the received SECURITY MODE COMMAND message.
  - 2> and the procedure ends.

#### 8.1.12.5 Reception of SECURITY MODE COMPLETE message by the UTRAN

UTRAN should apply integrity protection on the received SECURITY MODE COMPLETE message and all subsequent messages with the new integrity protection configuration, if changed. When UTRAN has received a SECURITY MODE COMPLETE message and the integrity protection has successfully been applied, UTRAN should:

- 1> if the IE "Ciphering mode info" was included in the SECURITY MODE COMMAND message:
  - 2> if new keys were received for the CN domain set in the IE "CN Domain Identity" in the SECURITY MODE COMMAND:
    - 3> set, at the downlink and uplink activation time, all the bits of the hyper frame numbers of the downlink and uplink COUNT-C values respectively for all radio bearers for this CN domain and all signalling radio bearers to zero.
  - 2> else (if new keys were not received):
    - 3> use, at the downlink and uplink activation time, the value "START" in the most recently received IE "START list" or IE "START" that belongs to the CN domain as indicated in the IE "CN domain identity" to initialise all hyper frame numbers of the downlink and uplink COUNT-C values respectively for all the signalling radio bearers as follows:
      - 4> set the 20 most significant bits of the hyper frame numbers of the COUNT-C for all signalling radio bearers to the value "START" in the most recently received IE "START list" or IE "START" for that CN domain;
      - 4> set the remaining bits of the hyper frame numbers equal to zero.
- 1> if the IE "Integrity protection mode info" was included in the SECURITY MODE COMMAND message:
  - 2> if this was not the first SECURITY MODE COMMAND message for this RRC connection:
    - 3> if new keys have been received for the CN domain set in the IE "CN Domain Identity" included in the transmitted SECURITY MODE COMMAND message:
      - 4> initialise, at the downlink and uplink activation time, all hyper frame numbers of the downlink and uplink COUNT-I values respectively for all the signalling radio bearers other than RB2 as follows:
        - 5> set all bits of the hyper frame numbers of the uplink and downlink COUNT-I to zero.

- 3> if no new keys have been received for the CN domain set in the IE "CN Domain Identity" included in the transmitted SECURITY MODE COMMAND message:
  - 4> use, at the downlink and uplink activation time, the value "START" in the most recently received IE "START list" or IE "START" that belongs to the CN domain as indicated in the IE "CN domain identity" to initialise all hyper frame numbers of the downlink and uplink COUNT-I values respectively for all the signalling radio bearers other than RB2 as follows:
    - 5> set the 20 most significant bits of the hyper frame numbers of the downlink and uplink COUNT-I respectively for all signalling radio bearers to the value "START" in the most recently received IE "START list" or IE "START" for that CN domain;
    - 5> set the remaining bits of the hyper frame numbers equal to zero.
- 1> send an indication to upper layers that the new security configuration has been activated;
- 1> resume, in the downlink, all suspended radio bearers and all signalling radio bearers;
- 1> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;
- 1> if the IE "Integrity protection mode command" included in the SECURITY MODE COMMAND had the value "Start":
  - 2> start applying integrity protection in the downlink for all signalling radio bearers.
- 1> if the IE "Integrity protection mode command" included in the SECURITY MODE COMMAND had the value "Modify":
  - 2> start applying the new integrity protection configuration in the downlink at the RRC sequence number, for each signalling radio bearers RBn, except for signalling radio bearer RB2, indicated by the entry for signalling radio bearer n in the "RRC message sequence number list" in the IE "Downlink integrity protection activation info";
  - 2> continue applying the new integrity configuration for signalling radio bearer RB2;
  - 2> apply the new integrity protection configuration on the received signalling messages with RRC SN greater than or equal to the number associated with the signalling radio bearer in IE "Uplink integrity protection activation info".
- 1> apply the old ciphering configuration for the transmission of RLC PDUs with RLC sequence number less than the number indicated in the IE "Radio bearer downlink ciphering activation time info" included in the IE "Ciphering mode info";
- 1> apply the new ciphering configuration for the transmission of RLC PDUs with RLC sequence number greater than or equal to the number indicated in IE "Radio bearer downlink ciphering activation time info" included in the IE "Ciphering mode info";
- 1> apply the old integrity protection configuration on the received signalling messages with RRC SN smaller than the number associated with the signalling radio bearer in IE "Uplink integrity protection activation info";
- 1> for radio bearers using RLC-AM or RLC-UM:
  - 2> use the old ciphering configuration for received RLC PDUs with RLC sequence number less than the RLC sequence number indicated in the IE "Radio bearer uplink ciphering activation time info" sent by the UE;
  - 2> use the new ciphering configuration for received RLC PDUs with RLC sequence number greater than or equal to the RLC sequence number indicated in the IE "Radio bearer uplink ciphering activation time info" sent by the UE;
  - 2> if an RLC reset or re-establishment of the transmitting side of an RLC entity occurs after the SECURITY MODE COMPLETE message has been received by UTRAN before the downlink activation time for the new ciphering configuration has been reached, ignore the activation time and apply the new ciphering configuration in downlink immediately after the RLC reset or RLC re-establishment;
  - 2> if an RLC reset or re-establishment of the receiving side of an RLC entity occurs after the SECURITY MODE COMPLETE message has been received by UTRAN before the uplink activation time for the new

ciphering configuration has been reached, ignore the activation time and apply the new ciphering configuration in uplink immediately after the RLC reset or RLC re-establishment.

- 1> for radio bearers using RLC-TM:
  - 2> use the old ciphering configuration for the received RLC PDUs before the CFN as indicated in the IE "Ciphering activation time for DPCH" in the IE "Ciphering mode info" as included in the SECURITY MODE COMMAND;
  - 2> use the new ciphering configuration for the received RLC PDUs at the CFN as indicated in the IE "Ciphering activation time for DPCH" in the IE "Ciphering mode info" as included in the SECURITY MODE COMMAND.
- 1> and the procedure ends.

#### 8.1.12.6 Invalid SECURITY MODE COMMAND message

If the SECURITY MODE COMMAND message contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows:

- 1> transmit a SECURITY MODE FAILURE message on the uplink DCCH using AM RLC;
- 1> set the IE "RRC transaction identifier" in the SECURITY MODE FAILURE message to the value of "RRC transaction identifier" in the entry for the SECURITY MODE COMMAND message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> set the IE "failure cause" to the cause value "protocol error";
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION;
- 1> when the response message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid SECURITY MODE COMMAND message has not been received;
  - 2> only accept a message on SRB 2, with a COUNT-I that:
    - 3> is higher than the COUNT-I used prior to receiving the SECURITY MODE COMMAND message incremented by one; and
    - 3> does not take into account the HFN from the received SECURITY MODE COMMAND message.
  - 2> and the procedure ends.

# 8.1.13 Signalling connection release procedure

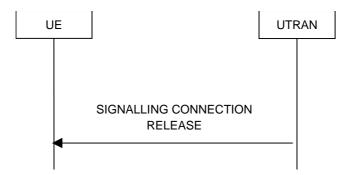


Figure 8.1.13-1: Signalling connection release procedure, normal case

#### 8.1.13.1 General

The signalling connection release procedure is used to notify to the UE that one of its ongoing signalling connections has been released. The procedure does not initiate the release of the RRC connection.

#### 8.1.13.2 Initiation of SIGNALLING CONNECTION RELEASE by the UTRAN

To initiate the procedure, the UTRAN transmits a SIGNALLING CONNECTION RELEASE message on DCCH using AM RLC.

#### 8.1.13.3 Reception of SIGNALLING CONNECTION RELEASE by the UE

Upon reception of a SIGNALLING CONNECTION RELEASE message, the UE shall:

- 1> indicate the release of the signalling connection and pass the value of the IE "CN domain identity" to upper layers;
- 1> remove the signalling connection with the identity indicated by the IE "CN domain identity" from the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 1> clear the entry for the SIGNALLING CONNECTION RELEASE message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> the procedure ends.

#### 8.1.13.4 Invalid SIGNALLING CONNECTION RELEASE message

If the UE receives a SIGNALLING CONNECTION RELEASE message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows:

- 1> include the IE "Identification of received message"; and
  - 2> set the IE "Received message type" to SIGNALLING CONNECTION RELEASE;
  - 2> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the SIGNALLING CONNECTION RELEASE message in the table "Rejected transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry.
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION;
- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC
- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid SIGNALLING CONNECTION RELEASE message has not been received.

#### 8.1.13.5 Invalid configuration

If radio access bearers for the CN domain indicated by the IE "CN domain identity" exist in the variable ESTABLISHED\_RABS, the UE shall:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to SIGNALLING CONNECTION RELEASE; and

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the SIGNALLING CONNECTION RELEASE message in the table "Accepted transactions" in the variable TRANSACTIONS and clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value "Message not compatible with receiver state";
- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid SIGNALLING CONNECTION RELEASE message has not been received.

# 8.1.14 Signalling connection release indication procedure

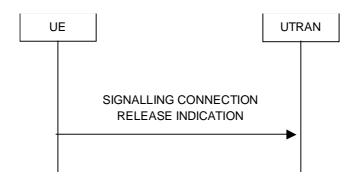


Figure 8.1.14-1: Signalling connection release indication procedure, normal case

#### 8.1.14.1 General

The signalling connection release indication procedure is used by the UE to indicate to the UTRAN that one of its signalling connections has been released. The procedure may in turn initiate the RRC connection release procedure.

#### 8.1.14.2 Initiation

The UE shall, on receiving a request to release (abort) the signalling connection from upper layers for a specific CN domain:

- 1> if a signalling connection in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS for the specific CN domain identified with the IE "CN domain identity" exists:
  - 2> initiate the signalling connection release indication procedure.
- 1> otherwise:
  - 2> abort any ongoing establishment of signalling connection for that specific CN domain as specified in 8.1.3.5a.

Upon initiation of the signalling connection release indication procedure in CELL\_PCH or URA\_PCH state, the UE shall:

- 1> if variable H\_RNTI and variable C\_RNTI are set:
  - 2> continue with the signalling connection release indication procedure as below.
- 1> else:
  - 2> perform a cell update procedure, according to subclause 8.3.1, using the cause "uplink data transmission";
  - 2> when the cell update procedure completed successfully:
    - 3> continue with the signalling connection release indication procedure as below.

The UE shall:

- 1> set the IE "CN Domain Identity" to the value indicated by the upper layers. The value of the IE indicates the CN domain whose associated signalling connection the upper layers are indicating to be released;
- 1> remove the signalling connection with the identity indicated by upper layers from the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 1> transmit a SIGNALLING CONNECTION RELEASE INDICATION message on DCCH using AM RLC.

When the successful delivery of the SIGNALLING CONNECTION RELEASE INDICATION message has been confirmed by RLC the procedure ends.

#### 8.1.14.2a RLC re-establishment or inter-RAT change

If a re-establishment of the transmitting side of the RLC entity on signalling radio bearer RB2 occurs before the successful delivery of the SIGNALLING CONNECTION RELEASE INDICATION message has been confirmed by RLC, the UE shall:

1> retransmit the SIGNALLING CONNECTION RELEASE INDICATION message on the uplink DCCH using AM RLC on signalling radio bearer RB2.

If an Inter-RAT handover from UTRAN procedure occurs before the successful delivery of the SIGNALLING CONNECTION RELEASE INDICATION message has been confirmed by RLC, the UE shall:

1> abort the signalling connection while in the new RAT.

# 8.1.14.3 Reception of SIGNALLING CONNECTION RELEASE INDICATION by the UTRAN

Upon reception of a SIGNALLING CONNECTION RELEASE INDICATION message, the UTRAN requests the release of the signalling connection from upper layers. Upper layers may then initiate the release of the signalling connection.

# 8.1.15 Counter check procedure

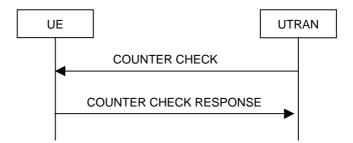


Figure 8.1.15-1: Counter check procedure

#### 8.1.15.1 General

The counter check procedure is used by the UTRAN to perform a local authentication. The purpose of the procedure is to check that the amount of data sent in both directions (uplink and downlink) over the duration of the RRC connection is identical at the UTRAN and at the UE (to detect a possible intruder - a 'man-in-the-middle' - from operating).

This procedure is only applicable to radio bearers, and only to radio bearers using RLC-AM or RLC-UM. It should be noted that this requires that the COUNT-C values for each UL and DL radio bearers using RLC-AM or RLC-UM continue to be incremented even if ciphering is not used. This procedure is not applicable to signalling radio bearers.

#### 8.1.15.2 Initiation

The UTRAN monitors the COUNT-C value associated with each radio bearer using UM or AM RLC. The procedure is triggered whenever any of these values reaches a critical checking value. The granularity of these checking values and

the values themselves are defined to the UTRAN by the visited network. The UTRAN initiates the procedure by sending a COUNTER CHECK message on the downlink DCCH.

# 8.1.15.3 Reception of a COUNTER CHECK message by the UE

When the UE receives a COUNTER CHECK message it shall compare the COUNT-C MSB values received in the IE "RB COUNT-C MSB information" in the COUNTER CHECK message to the COUNT-C MSB values of the corresponding radio bearers.

#### The UE shall:

- 1> set the IE "RRC transaction identifier" in the COUNTER CHECK RESPONSE message to the value of "RRC transaction identifier" in the entry for the COUNTER CHECK message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry.

#### If:

- there is one or more radio bearer(s) using UM or AM RLC mode stored in the variable ESTABLISHED\_RABS, which is (are) not included in the IE "RB COUNT-C MSB information"; or
- there is one or more radio bearer(s) included in the IE "RB COUNT-C MSB information", which is (are) not stored in the variable ESTABLISHED\_RABS; or
- for any radio bearer (excluding signalling radio bearers) using UM or AM RLC mode stored in the variable ESTABLISHED\_RABS and included in the IE "RB COUNT-C MSB information" with COUNT-C MSB values different from the MSB part of the COUNT-C values in the UE:

#### the UE shall:

1> include these radio bearers in the IE "RB COUNT-C information" in the COUNTER CHECK RESPONSE message. For any RB which is included in the IE "RB COUNT-C MSB information" in the COUNTER CHECK message but not stored in the variable ESTABLISHED\_RABS in the UE, the MSB part of COUNT-C values in the COUNTER CHECK RESPONSE message shall be set identical to COUNT-C-MSB values in the COUNTER CHECK message. The LSB part shall be filled with zeroes.

#### The UE shall:

- 1> if no COUNT-C exists for a radio bearer for a given direction (uplink or downlink) because:
  - 2> it is a uni-directional radio bearer configured only for the other direction (downlink or uplink respectively); or
  - 2> it has been configured to RLC-TM mode in one direction (uplink or downlink) and RLC-UM in the other (downlink or uplink respectively):
    - 3> set the COUNT-C in the IE "RB COUNT-C information" in the COUNTER CHECK RESPONSE message, to any value.
- 1> submit a COUNTER CHECK RESPONSE message to lower layers for transmission on the uplink DCCH using AM RLC.

When the COUNTER CHECK RESPONSE message has been submitted to lower layers for transmission the procedure ends.

#### 8.1.15.4 Reception of the COUNTER CHECK RESPONSE message by UTRAN

If the UTRAN receives a COUNTER CHECK RESPONSE message that does not contain any COUNT-C values, the procedure ends.

If the UTRAN receives a COUNTER CHECK RESPONSE message that contains one or several COUNT-C values the UTRAN may release the RRC connection.

#### 8.1.15.5 Cell re-selection

If the UE performs cell re-selection anytime during this procedure it shall, without interrupting the procedure:

1> initiate the cell update procedure according to subclause 8.3.1.

#### 8.1.15.6 Invalid COUNTER CHECK message

If the UE receives a COUNTER CHECK message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to COUNTER CHECK; and
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the UE COUNTER CHECK message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION;
- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid COUNTER CHECK message has not been received.

#### 8.1.16 Inter RAT handover information transfer



Figure 8.1.16-1: Inter RAT handover information transfer, normal flow

#### 8.1.16.1 General

The inter RAT handover information transfer procedure is used by the UE to convey RRC information needed for inter RAT handover to UTRAN.

#### 8.1.16.2 Initiation

If:

- a radio access technology other than UTRA, e.g. GSM, using radio access technology-specific procedures, orders the UE to provide the INTER RAT HANDOVER INFO message; or
- a radio access technology other than UTRA, e.g. GSM, using radio access technology-specific procedures, configures the UE to send the INTER RAT HANDOVER INFO message upon system specific conditions not involving an explicit order e.g. early classmark sending upon entering connected mode; or

- while in connected mode using another radio access technology, the inter RAT handover info changes compared to what has previously been sent via the other radio access technology:

#### the UE shall:

1> initiate the inter RAT handover information transfer procedure.

To determine if the inter RAT handover info has changed compared to what has previously been sent, the UE shall:

- 1> store the information last sent in the variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED;
- 1> if this variable has not yet been set:
  - 2> not initiate the inter RAT handover information transfer procedure due to change of inter RAT handover info.

NOTE: Currently neither the UE security information nor the predefined configuration status information change while in connected mode using GSM radio access technology.

## 8.1.16.3 INTER RAT HANDOVER INFO message contents to set

#### The UE shall:

- 1> include the IE "UE security information", and the IE "UE security information2" if supported by the UE; and
- 1> not include the IE "UE Specific Behaviour Information 1 interRAT".
- 1> in case support for the compressed version of the inter RAT handover info is indicated via the other radio access technology:
  - 2> include of the following IEs the IE that after encoding has the smallest size: IE "Predefined configuration status information compressed" or the IE "Predefined configuration status information";
  - 2> include the IE "UE radio access capability compressed".

#### 1> else:

- 2> include the IE "Predefined configuration status information";
- 2> include the IE "UE capability container", containing the IE "UE radio access capability" and the IE "UE radio access capability extension", in accordance with the following:
  - 3> if the UE supports multiple UTRA FDD Frequency Bands; or
  - 3> if the UE supports a single UTRA FDD Frequency Band different from Band I [21]:
    - 4> include the IE "UE radio access capability", excluding IEs "RF capability FDD" and "Measurement capability";
    - 4> include the IE "UE radio access capability extension", including the IEs "RF capability FDD extension" and the "Measurement capability extension" associated with each supported UTRA FDD frequency band indicated in the IE "Frequency band".

#### 3> else:

- 4> include the IE "UE radio access capability", including the IEs "RF capability FDD" and "Measurement capability" associated with the Band I [21];
- 4> include the IE "UE radio access capability extension", including the IEs "RF capability FDD extension" and the "Measurement capability extension" associated with each supported UTRA FDD frequency band indicated in the IE "Frequency band".
- 1> For FDD, include the IE "UE radio access capability comp 2";
- 1> initiate the transfer of the INTER RAT HANDOVER INFO message via the other radio access technology, using radio access technology-specific procedures;

- 1> store the following in the variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED if they were included in the INTER RAT HANDOVER INFO message:
  - 2> the IE "Predefined configuration status information";
  - 2> the IE "Predefined configuration status information compressed";
  - 2> the IE "UE security information";
  - 2> the IE "UE security information2";
  - 2> the IE "UE radio access capability";
  - 2> the IE "UE radio access capability extension"; and
  - 2> the IE "UE radio access capability compressed";
  - 2> if the IE "UE radio access capability compressed" were included in the INTER RAT HANDOVER INFO message:
  - 3> set the IE "Security Capability" to the mandatory R99 algorithms.
- 1> and the procedure ends.

# 8.2 Radio Bearer control procedures

# 8.2.1 Radio bearer establishment

See subclause 8.2.2 Reconfiguration procedures.

# 8.2.2 Reconfiguration procedures

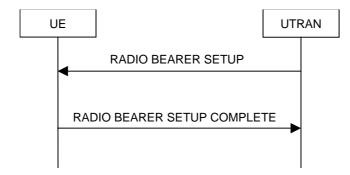


Figure 8.2.2-1: Radio Bearer Establishment, normal case

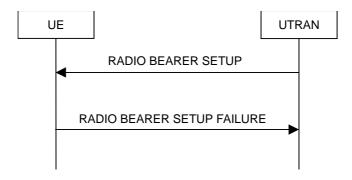


Figure 8.2.2-2: Radio Bearer Establishment, failure case

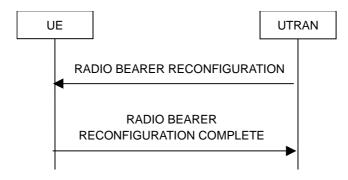


Figure 8.2.2-3: Radio bearer reconfiguration, normal flow

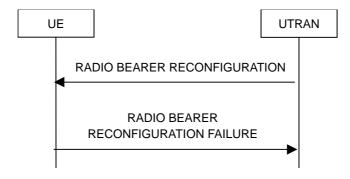


Figure 8.2.2-4: Radio bearer reconfiguration, failure case

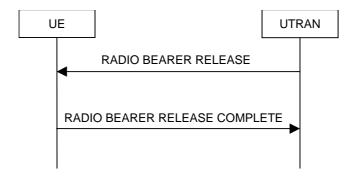


Figure 8.2.2-5: Radio Bearer Release, normal case

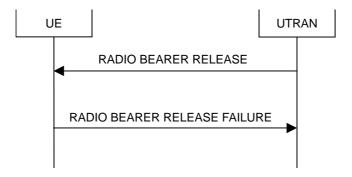


Figure 8.2.2-6: Radio Bearer Release, failure case

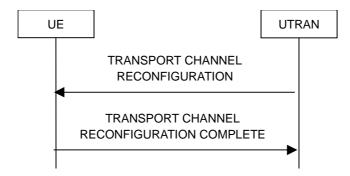


Figure 8.2.2-7: Transport channel reconfiguration, normal flow

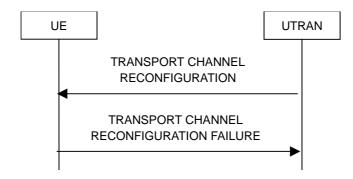


Figure 8.2.2-8: Transport channel reconfiguration, failure case

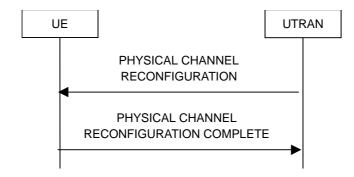


Figure 8.2.2-9: Physical channel reconfiguration, normal flow

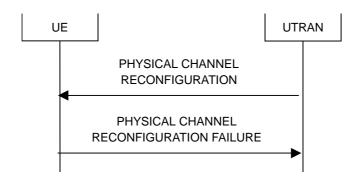


Figure 8.2.2-10: Physical channel reconfiguration, failure case

#### 8.2.2.1 General

Reconfiguration procedures include the following procedures:

- the radio bearer establishment procedure;
- radio bearer reconfiguration procedure;

- the radio bearer release procedure;
- the transport channel reconfiguration procedure; and
- the physical channel reconfiguration procedure.

The radio bearer establishment procedure is used to establish new radio bearer(s).

The radio bearer reconfiguration procedure is used to reconfigure parameters for a radio bearer.

The radio bearer release procedure is used to release radio bearer(s).

The transport channel reconfiguration procedure is used to reconfigure transport channel parameters.

The physical channel reconfiguration procedure is used to establish, reconfigure and release physical channels.

While performing any of the above procedures, these procedures may perform a hard handover (subclause 8.3.5) and/or an HS-DSCH cell change and/or a serving E-DCH cell change. The reconfiguration procedures are also used to change the feedback configuration for HS-DSCH.

#### 8.2.2.2 Initiation

To initiate any one of the reconfiguration procedures, UTRAN should:

- 1> configure new radio links in any new physical channel configuration;
- 1> start transmission and reception on the new radio links;
- 1> for a radio bearer establishment procedure:
  - 2> transmit a RADIO BEARER SETUP message on the downlink DCCH using AM or UM RLC;
  - 2> if signalling radio bearer RB4 is setup with this procedure and signalling radio bearers RB1-RB3 were already established prior to the procedure:
    - 3> if the variable "LATEST\_CONFIGURED\_CN\_DOMAIN" has been initialised:
      - 4> connect any radio bearers setup by the same message as signalling radio bearer RB4 to the CN domain indicated in the variable "LATEST CONFIGURED CN DOMAIN".
- 1> for a radio bearer reconfiguration procedure:
  - 2> transmit a RADIO BEARER RECONFIGURATION message on the downlink DCCH using AM or UM RLC.
- 1> for a radio bearer release procedure:
  - 2> transmit a RADIO BEARER RELEASE message on the downlink DCCH using AM or UM RLC.
- 1> for a transport channel reconfiguration procedure:
  - 2> transmit a TRANSPORT CHANNEL RECONFIGURATION message on the downlink DCCH using AM or UM RLC.
- 1> for a physical channel reconfiguration procedure:
  - 2> transmit a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH using AM or UM RLC.
- 1> if the reconfiguration procedure is simultaneous with SRNS relocation procedure:
  - 2> if the transmitted message is a RADIO BEARER RECONFIGURATION:
    - 3> include the IE "New U-RNTI".
  - 2> else:

- 3> include the IE "Downlink counter synchronisation info".
- 2> if ciphering and/or integrity protection are activated:
  - 3> include new ciphering and/or integrity protection configuration information to be used after reconfiguration.
- 2> use the downlink DCCH using AM RLC.
- 1> if transport channels are added, reconfigured or deleted in uplink and/or downlink:
  - 2> set TFCS according to the new transport channel(s).
- 1> if transport channels are added or deleted in uplink and/or downlink, and RB Mapping Info applicable to the new configuration has not been previously provided to the UE, the UTRAN should:
  - 2> send the RB Mapping Info for the new configuration.

In the Radio Bearer Reconfiguration procedure UTRAN may indicate that uplink transmission shall be stopped or continued on certain radio bearers. Uplink transmission on a signalling radio bearer used by the RRC signalling (signalling radio bearer RB1) should not be stopped.

- NOTE 1: The Release '99 RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure", even if UTRAN does not require the reconfiguration of any RB. In these cases, UTRAN may include only the IE "RB identity" within the IE "RB information to reconfigure".
- NOTE 2: The Release '99 RADIO BEARER RECONFIGURATION message always includes the IE "Downlink information per radio link list", even if UTRAN does not require the reconfiguration of any RL. In these cases, UTRAN may re-send the currently assigned values for the mandatory IEs included within the IE "Downlink information per radio link list".
- NOTE 3: The Release '99 RADIO BEARER RECONFIGURATION message always includes the IE "Primary CPICH Info" (FDD) or IE "Primary CCPCH Info" (TDD) within IE "Downlink information per radio link list". This implies that in case UTRAN applies the RADIO BEARER RECONFIGURATION message to move the UE to CELL\_FACH state, it has to indicate a cell. However, UTRAN may indicate any cell; the UE anyhow performs cell selection and notifies UTRAN if it selects another cell than indicated by UTRAN.

If the IE "Activation Time" is included, UTRAN should set it to a value taking the UE performance requirements into account.

UTRAN should take the UE capabilities into account when setting the new configuration.

If the message is used to initiate a transition from CELL\_DCH to CELL\_FACH state, the UTRAN may assign a C-RNTI to be used in that cell by the UE. In FDD, if a C-RNTI is assigned, then UTRAN may additionally assign an H-RNTI to be used in that cell by the UE.

For FDD, if the message is used to initiate a transition to CELL\_PCH state, the UTRAN may assign a C-RNTI and an H-RNTI to be used in that cell by the UE.

#### 8.2.2.2a Initiation of handover from GERAN *lu mode*

To initiate the handover from GERAN Iu mode, UTRAN should:

- 1> provide a RADIO BEARER RECONFIGURATION message to be encapsulated in INTERSYSTEM HANDOVER TO UTRAN COMMAND message, sent on the downlink SRB2 in GERAN *Iu mode*, as specified in [53].
- 1> in case UTRAN decides to use a predefined or default radio configuration that is stored in the UE, it should include the following information in the RADIO BEARER RECONFIGURATION message:
  - PhyCH information elements; and
  - either:

- the IE "Predefined configuration identity", to indicate which pre-defined configuration of RB, transport channel and physical channel parameters shall be used; or
- the IE "Default configuration mode" and IE "Default configuration identity", to indicate which default configuration of RB, transport channel and physical channel parameters shall be used.

# 8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

#### The UE shall:

- 1> be able to receive any of the following messages:
  - 2> RADIO BEARER SETUP message; or
  - 2> RADIO BEARER RECONFIGURATION message; or
  - 2> RADIO BEARER RELEASE message; or
  - 2> TRANSPORT CHANNEL RECONFIGURATION message; or
  - 2> PHYSICAL CHANNEL RECONFIGURATION message;
- 1> be able to perform a hard handover and apply physical layer synchronisation procedure A as specified in [29], even if no prior UE measurements have been performed on the target cell and/or frequency.

In case the reconfiguration procedure is used to remove all existing RL(s) in the active set while new RL(s) are established the UE shall:

#### 1> For FDD:

- 2> if the UE has a pending "TGPS reconfiguration CFN" at the activation time received in the reconfiguration message and the reconfiguration requests a timing re-initialised hard handover (see subclause 8.3.5.1), the UE may:
  - 3> abort the pending CM activation;
  - 3> set the CM\_PATTERN\_ACTIVATION\_ABORTED to TRUE.
- 2> otherwise:
  - 3> set the CM\_PATTERN\_ACTIVATION\_ABORTED to FALSE.

#### If the UE receives:

- a RADIO BEARER SETUP message; or
- a RADIO BEARER RECONFIGURATION message; or
- a RADIO BEARER RELEASE message; or
- a TRANSPORT CHANNEL RECONFIGURATION message; or
- a PHYSICAL CHANNEL RECONFIGURATION message:

#### it shall:

- 1> set the variable ORDERED RECONFIGURATION to TRUE;
- 1> if the UE will enter the CELL\_DCH state from any state other than CELL\_DCH state at the conclusion of this procedure:
  - 2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The ASN.1 "r3" version of the RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

In case the UE receives a RADIO BEARER RECONFIGURATION message with the IE "Specification mode" set to "Preconfiguration" while the message is not sent through GERAN *Iu mode*, the UE behaviour is unspecified.

In case the UE receives a RADIO BEARER SETUP message with the IE "Specification mode" not set to "Complete Specification", the UE behaviour is unspecified.

If after state transition the UE enters CELL\_DCH state, the UE shall, after the state transition:

- 1> in FDD; or
- 1> in TDD when "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
  - 2> remove any C-RNTI from MAC;
  - 2> clear the variable C RNTI.

If after state transition the UE leaves CELL\_DCH state, the UE shall, after the state transition:

- 1> if any IEs related to HS-DSCH are stored in the UE:
  - 2> clear any stored IE "Downlink HS-PDSCH information";
  - 2> for 1.28Mcps TDD, clear the IE "HS-PDSCH Midamble Configuration" and the IE "HS-SCCH Set Configuration" in the IE "DL Multi Carrier Information";
  - 2> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.
- 1> if any IEs related to E-DCH are stored in the UE:
  - 2> clear any stored IE "E-DCH info";
  - 2> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.
- 1> if any of the IEs "DTX-DRX timing information" or "DTX-DRX information" are stored in the UE:
  - 2> determine the value for the DTX\_DRX\_STATUS variable and take the corresponding actions as described in subclause 8.5.34.
- 1> if the IE "HS-SCCH less information" is stored in the UE:
  - 2> determine the value for the HS\_SCCH\_LESS\_STATUS variable and take the corresponding actions as described in subclause 8.5.35.

- 1> if any IEs related to MIMO are stored in the UE:
  - 2> determine the value for the MIMO\_STATUS variable and take the corresponding actions as described in subclause 8.5.33.
- 1> if the IE "UE Mobility State Indicator" was present in the reconfiguration message:
  - 2> consider the High-mobility state to have being detected.

If the UE was in CELL\_DCH state upon reception of the reconfiguration message and remains in CELL\_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> in TDD:
  - 2> if "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
    - 3> remove any C-RNTI from MAC;
    - 3> clear the variable C\_RNTI.
  - 2> if "Primary CCPCH Info" is included indicating a new target cell and "New H-RNTI" is not specified:
    - 3> remove any H-RNTI from MAC;
    - 3> clear the variable H RNTI;
    - 3> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.
  - 2> if the reconfiguration message caused a change from FDD mode to 3.84/7.68 Mcps TDD mode and provides for E-DCH/HS-DSCH operation without an uplink DPCH:
    - 3> the UE shall obtain timing advance for the 3.84/7.68 Mcps TDD cell according to [15].
- 1> if "DPCH frame offset" is included for one or more RLs in the active set, and the reconfiguration procedure does not request a timing reinitialized hard handover (see subclause 8.3.5.1):
  - 2> use its value to determine the beginning of the DPCH or F-DPCH frame in accordance with the following:
    - 3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH or F-DPCH frame offset currently used by the UE:
      - 4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).
    - 3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:
      - 4> set the variable INVALID\_CONFIGURATION to TRUE.
    - 3> and the procedure ends.
  - 2> adjust the radio link timing accordingly.

If after state transition the UE enters CELL\_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to [4] on that frequency;
  - 2> if the UE finds a suitable UTRA cell on that frequency:
    - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received

reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):

- 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
- 4> when the cell update procedure completed successfully:
  - 5> if the UE is in CELL\_PCH or URA\_PCH state:
    - 6> if variable H\_RNTI and variable C\_RNTI are set:
      - 7> proceed as below.
    - 6> else:
      - 7> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
  - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
  - 3> when the cell update procedure completed successfully:
    - 4> if the UE is in CELL\_PCH or URA\_PCH state:
      - 5> if variable H\_RNTI and variable C\_RNTI are set:
        - 6> proceed as below.
      - 5> else:
        - 6> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to [4];
  - 2> if the UE finds a suitable UTRA cell on the current frequency:
    - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
      - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
      - 4> when the cell update procedure completed successfully:
        - 5> if the UE is in CELL\_PCH or URA\_PCH state:
          - 6> if variable H\_RNTI and variable C\_RNTI are set:
            - 7> proceed as below.
          - 6> else:
            - 7> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
  - 2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:
    - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
    - 3> when the cell update procedure completed successfully:

- 4> if the UE is in CELL\_PCH or URA\_PCH state:
  - 5> if variable H\_RNTI and variable C\_RNTI are set:
    - 6> proceed as below.
  - 5> else:
    - 6> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS\_AND\_CONSTANTS;
- 1> select PRACH according to subclause 8.5.17;
- 1> for TDD; or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_FACH state; or
- 1> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 2> select Secondary CCPCH according to subclause 8.5.19;
  - 2> use the transport format set given in system information;
  - 2> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.

#### 1> else:

- 2> if the RBs have the multiplexing option with transport channel type "HS-DSCH" for the DL and transport channel type "RACH" in the UL; and
- 2> if variable H\_RNTI and variable C\_RNTI are set:
  - 3> start to receive HS-DSCH according to the procedure in subclause 8.5.36.
- 2> else:
  - 3> clear variable C\_RNTI and delete any stored C-RNTI value;
  - 3> clear variable H\_RNTI and delete any stored H-RNTI value;
  - 3> clear any stored IE "HARQ Info".
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
  - 2> ignore that IE and stop using DRX.
- 1> if the contents of the variable C\_RNTI is empty:
  - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
  - 2> when the cell update procedure completed successfully:
    - 3> if the UE is in CELL\_PCH or URA\_PCH state:
      - 4> if variable H\_RNTI and variable C\_RNTI are set:
        - 5> proceed as below.
      - 4> else:
        - 5> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";

4> proceed as below.

If the UE was in CELL\_FACH state upon reception of the reconfiguration message and remains in CELL\_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to [4] on that frequency;
  - 2> if the UE finds a suitable UTRA cell on that frequency:
    - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
      - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
      - 4> when the cell update procedure completed successfully:
        - 5> if the UE is in CELL\_PCH or URA\_PCH state:
          - 6> if variable H\_RNTI and variable C\_RNTI are set:
            - 7> proceed as below.
          - 6> else:
            - 7> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
  - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
    - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
    - 3> when the cell update procedure completed successfully:
      - 4> if the UE is in CELL\_PCH or URA\_PCH state:
        - 5> if variable H\_RNTI and variable C\_RNTI are set:
          - 6> proceed as below.
        - 5> else:
          - 6> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
  - 2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:
    - 3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;
  - 2> or:
    - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:
      - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
      - 4> when the cell update procedure completed successfully:
        - 5> if the UE is in CELL\_PCH or URA\_PCH state:

- 6> if variable H\_RNTI and variable C\_RNTI are set:
  - 7> proceed as below.
- 6> else:
  - 7> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

If after state transition the UE leaves CELL\_FACH state, the UE shall:

1> stop timer T305.

If after state transition the UE enters CELL\_PCH or URA\_PCH state, the UE shall:

- 1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or
- 1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:
  - 2> if the variable PDCP\_SN\_INFO is empty:
    - 3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".
  - 2> else:
    - 3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";
    - 3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".
  - 2> re-establish the RLC entity for RB2;
  - 2> for the downlink and the uplink, apply the ciphering configuration as follows:
    - 3> if the received re-configuation message included the IE "Ciphering Mode Info":
      - 4> use the ciphering configuration in the received message when transmitting the response message.
    - 3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:
      - 4> if the previous SECURITY MODE COMMAND was received due to new keys being received:
        - 5> consider the new ciphering configuration to include the received new keys;
        - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.
      - 4> else if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST\_CONFIGURED\_CN\_DOMAIN:
        - 5> consider the new ciphering configuration to include the keys associated with the LATEST\_CONFIGURED\_CN\_DOMAIN;
        - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the

LATEST\_CONFIGURED\_CN\_DOMAIN at the reception of the previous SECURITY MODE COMMAND.

- 4> apply the new ciphering configuration immediately following RLC re-establishment.
- 3> else:
  - 4> continue using the current ciphering configuration.
- 2> set the new uplink and downlink HFN component of COUNT-C of RB2 to MAX(uplink HFN component of COUNT-C of RB2, downlink HFN component of COUNT-C of RB2);
- 2> increment by one the downlink and uplink values of the HFN of COUNT-C for RB2;
- 2> calculate the START value according to subclause 8.5.9;
- 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message did not include the IE "Downlink counter synchronisation info":
  - 2> if the variable START\_VALUE\_TO\_TRANSMIT is set:
    - 3> include and set the IE "START" to the value of that variable.
  - 2> if the variable START\_VALUE\_TO\_TRANSMIT is not set and the IE "New U-RNTI" is included:
    - 3> calculate the START value according to subclause 8.5.9;
    - 3> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".
  - 2> if the received reconfiguration message caused a change in the RLC PDU size, a change from flexible to fixed DL RLC PDU size or a change from fixed to flexible DL RLC PDU size with RLC length indicator set to 15 bits or a change of the RLC LI size for any RB using RLC-AM:
    - 3> calculate the START value according to subclause 8.5.9;
    - 3> include the calculated START values for the CN domain associated with the corresponding RB identity in the IE "START list" in the IE "Uplink counter synchronisation info".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
  - 2> set the IE "Status" in the variable SECURITY\_MODIFICATION for all the CN domains in the variable SECURITY\_MODIFICATION to "Affected".
- 1> if the received reconfiguration message contained the IE "Ciphering mode info":
  - 2> if the reconfiguration message is not used to perform SRNS relocation or a handover from GERAN *Iu mode* with change of ciphering algorithm:
    - 3> the UE behaviour is not specified.
  - 2> if the message is used to perform a timing re-initialised hard handover:
    - 3> if IE "Ciphering activation time for DPCH" is included:
      - 4> the UE behaviour is not specified.
  - 2> else:
    - 3> if the reconfiguration message is used to setup radio bearer(s) using RLC-TM; or
    - 3> if radio bearer(s) using RLC-TM already exist:
      - 4> if IE "Ciphering activation time for DPCH" is not included:

- 5> the UE behaviour is not specified.
- 1> if the received reconfiguration message contained the IE "Integrity Protection mode info":
  - 2> if the reconfiguration message is not used to perform SRNS relocation or a handover from GERAN *Iu mode*:
    - 3> the UE behaviour is not specified.
- 1> if the received reconfiguration message did not contain the IE "Ciphering activation time for DPCH" in IE "Ciphering mode info":
  - 2> if prior to this procedure there exist no transparent mode RLC radio bearers:
    - 3> if, at the conclusion of this procedure, the UE will be in CELL\_DCH state; and
    - 3> if, at the conclusion of this procedure, at least one transparent mode RLC radio bearer exists:
      - 4> include the IE "COUNT-C activation time" and specify a CFN value for this IE that is a multiple of 8 frames (CFN mod 8 = 0) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted.
- NOTE: UTRAN should not include the IE "Ciphering mode info" in any reconfiguration message unless it is also used to perform an SRNS relocation with change of ciphering algorithm.
- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> if the variable PDCP\_SN\_INFO is not empty:
  - 2> include the IE "RB with PDCP information list" and set it to the value of the variable PDCP\_SN\_INFO.
- 1> in TDD, if the procedure is used to perform a handover to a cell where timing advance is enabled, and the UE can calculate the timing advance value in the new cell (i.e. in a synchronous TDD network):
  - 2> set the IE "Uplink Timing Advance" according or the IE "Extended UL Timing Advance" to subclause 8.6.6.26.
- 1> if the IE "Integrity protection mode info" was present in the received reconfiguration message:
  - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.
- 1> if IE "RRC state indicator" is set to "CELL\_DCH":
  - 2> if the variable DEFERRED\_MEASUREMENT\_STATUS is set to TRUE:
    - 3> if System Information Block type 11 is scheduled on the BCCH and the UE has not read nor stored the IEs present in this System Information Block, or
    - 3> if System Information Block type 11bis is scheduled on the BCCH and the UE has not read nor stored the IEs present in this System Information Block, or
    - 3> if System Information Block type 12 is scheduled on the BCCH and the UE has not read nor stored the IEs present in this System Information Block:
      - 4> include IE "Deferred measurement control reading".

If after state transition the UE enters CELL\_DCH state, the UE shall, after the state transition:

- 1> if the IE "Deferred measurement control reading" was included in the response message:
  - 2> clear the variable CELL\_INFO\_LIST.

If after state transition the UE enters URA\_PCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to [4] on that frequency.
  - 2> if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
    - 3> proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to [4].
- 1> prohibit periodical status transmission in RLC;
- 1> for TDD; or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state; or
- 1> if the IE "HS-DSCH paging system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 2> remove any C-RNTI from MAC;
  - 2> clear the variable C\_RNTI;
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS\_AND\_CONSTANTS;
- 1> for TDD; or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state; or
- 1> if the IE "HS-DSCH paging system information" is not included:
  - 2> select Secondary CCPCH according to subclause 8.5.19;
  - 2> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.
- 1> else:
  - 2> clear variable C\_RNTI and delete any stored C-RNTI value;
  - 2> clear variable H RNTI and delete any stored H-RNTI value;
  - 2> clear any stored IE "HARQ Info";
  - 2> reset the MAC-ehs entity [15];
  - 2> monitor its paging occasions on the selected PICH determined according to subclauses 8.6.3.1a, 8.6.3.2 and 8.5.39 and receive paging on the HS-DSCH mapped on the HS-PDSCH selected by the UE according to the procedures in subclause 8.5.40.
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
  - 2> use the values in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- 1> if the criteria for URA update caused by "URA reselection" according to subclause 8.3.1 are fulfilled after cell selection:
  - 2> initiate a URA update procedure according to subclause 8.3.1 using the cause "URA reselection";

- 2> when the URA update procedure is successfully completed:
  - 3> the procedure ends.

If after state transition the UE enters CELL\_PCH state from CELL\_DCH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to [4] on that frequency.
  - 2> if the UE finds a suitable UTRA cell on that frequency:
    - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
      - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
      - 4> proceed as below.
  - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
    - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
    - 3> proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to [4].
  - 2> if the UE finds a suitable UTRA cell on the current frequency:
    - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
      - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
      - 4> proceed as below.
  - 2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:
    - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
    - 3> proceed as below.
- 1> prohibit periodical status transmission in RLC;
- 1> for TDD; or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state; or
- 1> if the IE "HS-DSCH paging system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 2> remove any C-RNTI from MAC;
  - 2> clear the variable C\_RNTI.
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS\_AND\_CONSTANTS;

- 1> for TDD: or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state; or
- 1> if the IE "HS-DSCH paging system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 2> select Secondary CCPCH according to subclause 8.5.19;
  - 2> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.
- 1> else:
  - 2> if IE "New C-RNTI" is not included:
    - 3> clear variable H\_RNTI and delete any stored H-RNTI value;
    - 3> clear any stored IE "HARQ Info";
    - 3> reset the MAC-ehs entity [15].
  - 2> monitor its paging occasions on the selected PICH determined according to subclauses 8.6.3.1a, 8.6.3.2 and 8.5.39 and receive PCCH or DCCH and DTCH on the HS-DSCH according to the procedures in subclause 8.5.40.
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
  - 2> use the values in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- 1> the procedure ends.

If after state transition the UE enters CELL\_DCH state from CELL\_FACH or from CELL\_PCH state:

- 1> if the IE "Default DPCH Offset Value" is not included:
  - 2> the UE behaviour is not specified.

If after state transition the UE enters CELL\_PCH state from CELL\_FACH state, the UE shall, after the state transition and transmission of the response message:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
  - 2> select a suitable UTRA cell according to [4] on that frequency.
  - 2> if the UE finds a suitable UTRA cell on that frequency:
    - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
      - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
      - 4> proceed as below.
  - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
    - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
    - 3> proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
  - 2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:

3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;

#### 2> or:

- 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:
  - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
  - 4> proceed as below.
- 1> prohibit periodical status transmission in RLC;
- 1> for TDD; or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state; or
- 1> if the IE "HS-DSCH paging system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 2> remove any C-RNTI from MAC;
  - 2> clear the variable C\_RNTI.
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS\_AND\_CONSTANTS;
- 1> for TDD; or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state; or
- 1> if the IE "HS-DSCH paging system information" is not included in System Information Block type 5 or System Information Block type 5 bis:
  - 2> select Secondary CCPCH according to subclause 8.5.19;
  - 2> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.

#### 1> else:

- 2> if IE "New C-RNTI" is not included:
  - 3> clear variable C\_RNTI and delete any stored C-RNTI value;
  - 3> clear variable H\_RNTI and delete any stored H-RNTI value;
  - 3> clear any stored IE "HARQ Info";
  - 3> reset the MAC-ehs entity [15].
- 2> monitor its paging occasions on the selected PICH determined according to subclauses 8.6.3.1a, 8.6.3.2 and 8.5.39 and receive PCCH or DCCH and DTCH on the HS-DSCH according to the procedures in subclause 8.5.40.
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
  - 2> use the values in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- 1> the procedure ends.

# 8.2.2.3a Reception of RADIO BEARER RECONFIGURATION message by the UE performing handover from GERAN *Iu mode*

If the UE is performing handover from GERAN Iu mode, the UE shall, in addition to the actions in 8.2.2.3:

- 1> if the IE "Specification mode" is set to "Preconfiguration" and the IE "Preconfiguration mode" is set to "Predefined configuration":
  - 2> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";
  - 2> initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;
  - 2> store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and
- 1> if the IE "Specification mode" is set to "Preconfiguration" and the IE "Preconfiguration mode" is set to "Default configuration":
  - 2> initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and the IE "Default configuration identity";
  - 2> initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements:

NOTE: The IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used.

- 1> if IE "Specification mode" is set to "Complete specification":
  - 2> initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.
- 1> perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;
- 1> set the following variables equal to the corresponding variables in GERAN *Iu mode*:

CIPHERING\_STATUS

ESTABLISHED\_RABS

ESTABLISHED\_SIGNALLING\_CONNECTIONS

INTEGRITY\_PROTECTION\_INFO

INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED

LATEST\_CONFIGURED\_CN\_DOMAIN

START\_THRESHOLD

UE\_CAPABILITY\_TRANSFERRED.

1> set the new uplink and downlink HFN of RB2 to MSB<sub>20</sub>(MAX(uplink HFN of RB2, downlink HFN of RB2));

NOTE: MSB<sub>20</sub>() operation provides the HFN mapping from GERAN *Iu mode* to UTRAN. In GERAN *Iu mode* the length of HFN component of the COUNT-C of RB2 is longer than 20 bits.

1> initialise the variable TIMERS\_AND\_CONSTANTS to the default values and start to use those timer and constants values.

## 8.2.2.4 Transmission of a response message by the UE, normal case

In case the procedure was triggered by reception of a RADIO BEARER SETUP message, the UE shall:

1> transmit a RADIO BEARER SETUP COMPLETE as response message on the uplink DCCH using AM RLC.

In case the procedure was triggered by reception of a RADIO BEARER RECONFIGURATION message, the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

In case the procedure was triggered by reception of a RADIO BEARER RELEASE message, the UE shall:

1> transmit a RADIO BEARER RELEASE COMPLETE as response message on the uplink DCCH using AM RLC.

In case the procedure was triggered by reception of a TRANSPORT CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

In case the procedure was triggered by reception of a PHYSICAL CHANNEL RECONFIGURATION message, the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message on the uplink DCCH using AM RLC.

If the new state is CELL\_DCH or CELL\_FACH, the response message shall be transmitted using the new configuration after the state transition, and the UE shall:

- 1> if the IE "Downlink counter synchronisation info" was included in the reconfiguration message; or
- 1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:
  - 2> when RLC has confirmed the successful transmission of the response message:
    - 3> if the variable PDCP\_SN\_INFO is empty:
      - 4> configure the RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "continue".
    - 3> else:
      - 4> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "continue";
      - 4> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "continue".
    - 3> re-establish all AM and UM RLC entities with RB identities larger than 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the corresponding CN domain;
    - 3> re-establish the RLC entities with RB identities 1, 3 and 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the CN domain stored in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
    - 3> set the remaining bits of the HFN component of COUNT-C values of all UM RLC entities to zero;
    - 3> if the IE "PDCP context relocation info" is not present:
      - 4> re-initialise the PDCP header compression entities of each radio bearer in the variable ESTABLISHED\_RABS as specified in [36].
    - 3> if the IE "PDCP context relocation info" is present:
      - 4> perform the actions as specified in subclause 8.6.4.13.
- 1> if the variable PDCP\_SN\_INFO is empty:

- 2> if the received reconfiguration message contained the IE "Ciphering mode info":
  - 3> when RLC has confirmed the successful transmission of the response message:
    - 4> notify upper layers upon change of the security configuration;
    - 4> perform the actions below.
- 2> if the received reconfiguration message did not contain the IE "Ciphering mode info":
  - 3> when RLC has been requested to transmit the response message:
    - 4> perform the actions below.
- 1> if the variable PDCP\_SN\_INFO is non-empty:
  - 2> when RLC has confirmed the successful transmission of the response message:
    - 3> for each radio bearer in the variable PDCP\_SN\_INFO:
      - 4> if the IE "RB started" in the variable ESTABLISHED RABS is set to "started":
        - 5> configure the RLC entity for that radio bearer to "continue".
    - 3> perform the actions below.

If the new state is CELL\_PCH or URA\_PCH, the response message shall be transmitted using the old configuration before the state transition, but the new C-RNTI shall be used if the IE "New C-RNTI" was included in the received reconfiguration message, and the UE shall:

- 1> when RLC has confirmed the successful transmission of the response message:
  - 2> for each radio bearer in the variable PDCP\_SN\_INFO:
    - 3> if the IE "RB started" in the variable ESTABLISHED\_RABS is set to "started":
      - 4> configure the RLC entity for that radio bearer to "continue".
  - 2> enter the new state (CELL\_PCH or URA\_PCH, respectively);
  - 2> perform the actions below.

#### The UE shall:

- 1> set the variable ORDERED\_RECONFIGURATION to FALSE;
- 1> if the received reconfiguration message contained the IE "Ciphering mode info":
  - 2> resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;
  - 2> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE; and
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO.
- 1> if the received reconfiguration message contained the IE "Integrity protection mode info":
  - 2> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;
  - 2> set "Uplink RRC Message sequence number" for signalling radio bearer RB0 in the variable INTEGRITY\_PROTECTION\_INFO to a value such that next RRC message to be sent on uplink RB0 will use the new integrity protection configuration;
  - 2> set the IE "Reconfiguration" in the variable INTEGRITY PROTECTION INFO to FALSE; and
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.
- 1> clear the variable PDCP\_SN\_INFO;

- 1> clear the variable START\_VALUE\_TO\_TRANSMIT;
- 1> clear the variable SECURITY\_MODIFICATION.

## 8.2.2.5 Reception of a response message by the UTRAN, normal case

When UTRAN has received

- the RADIO BEARER SETUP COMPLETE message; or
- the RADIO BEARER RECONFIGURATION COMPLETE message; or
- the RADIO BEARER RELEASE COMPLETE message; or
- the TRANSPORT CHANNEL RECONFIGURATION COMPLETE message; or
- the PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

#### UTRAN may:

1> delete the old configuration.

If the procedure caused the UE to leave the CELL\_FACH state, UTRAN may:

1> delete the C-RNTI of the UE.

If the IE "UL Timing Advance" or the IE "Extended UL Timing Advance" is included in TDD, UTRAN should:

1> evaluate the timing advance value that the UE has to use in the new cell after handover.

If the IE "START" or the IE "START list" is included, UTRAN should:

- 1> set the START value for each CN domain with the corresponding values as received in this response message;
- 1> consequently, then use the START values to initialise the hyper frame numbers, in the same way as specified for the UE in subclause 8.2.2.3, for any new radio bearers that are established.

If UTRAN has ordered a ciphering reconfiguration by including the IE "Ciphering mode info", UTRAN should:

- 1> for radio bearers using RLC-AM or RLC-UM:
  - 2> on the receiving side of an RLC entity apply the new ciphering configuration in uplink immediately;
  - 2> on the transmitting side of an RLC entity apply the new ciphering configuration in downlink immediately.
- 1> for radio bearers using RLC-TM:
  - 2> begin incrementing the COUNT-C at the CFN only as indicated in:
    - 3> the IE "Ciphering activation time for DPCH" in the IE "Ciphering mode info", if included in the message that triggered the radio bearer control procedure; or
    - 3> the IE "COUNT-C activation time", if included in the response message for this procedure.
- 1> and the procedure ends on the UTRAN side.

#### 8.2.2.5a Rejection by the UE

If the UTRAN establishes one or more p-t-p radio bearer(s) for the transmission of a session of an MBMS service, identified by the IE "MBMS Session identity", for which upper layers indicate that it has already been received correctly, the UE shall:

- 1> transmit a failure response as specified in subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier";

- 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 2> clear that entry; and
- 2> set the IE "failure cause" to "MBMS session already received correctly".
- 1> set the variable UNSUPPORTED CONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.
- 1> the procedure ends.

If the UTRAN establishes one or more p-t-p radio bearer(s) for the transmission of a session of an MBMS service, which will inhibit reception of one or more MBMS services which according to upper layers are of higher priority, the UE may:

- 1> transmit a failure response as specified in subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier";
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS;
  - 2> clear that entry; and
  - 2> set the IE "failure cause" to "Lower priority MBMS service".
- 1> set the variable UNSUPPORTED CONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.
- 1> the procedure ends.

## 8.2.2.6 Unsupported configuration in the UE

If the UTRAN instructs the UE to use a configuration, which it does not support and/or if the received message causes the variable UNSUPPORTED\_CONFIGURATION to be set to TRUE, the UE shall:

- 1> transmit a failure response as specified in subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "configuration unsupported".
- 1> set the variable UNSUPPORTED\_CONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The procedure ends.

## 8.2.2.7 Physical channel failure

If the received message caused the UE to be in CELL\_DCH state and the UE according to subclause 8.5.4 failed to establish the dedicated physical channel(s) indicated in the received message or for 3.84 Mcps TDD or 7.68 Mcps TDD failed to establish the physical channel(s) indicated in the received message to which DCCH(s) are mapped the UE shall:

1> For TDD or for FDD if the CM\_PATTERN\_ACTIVATION\_ABORTED flag is not set to TRUE:

- 2> revert to the configuration prior to the reception of the message (old configuration), including any HS-DSCH E-DCH, DTX, and DRX configuration if existing. If there exists any DTX or DRX configuration, the UE shall instruct the physical layer to consider only the HS-SCCH orders which were acknowledged prior to the activation time of the received message;
- 2> For FDD: if the UE was in Cell DCH state prior to the reconfiguration:
  - 3> if the variable DTX\_DRX\_STATUS is set to TRUE, re-configure the physical layer to perform discontinuous uplink DPCCH transmission and enable or disable discontinuous downlink reception operations according to the variable DTX\_DRX\_PARAMS at the CFN corresponding to the frame boundary that is offset by the stored value of the IE "Enabling Delay" from the frame boundary where uplink transmission resumes with the old configuration;
  - 3> perform the physical layer synchronisation procedure A as specified in [29];
  - 3> apply power control preamble according to [26] during the number of frames indicated in the IE "PC preamble" in the variable LATEST\_CONFIGURED\_SRB\_DELAY\_AND\_PC\_PREAMBLE; and
  - 3> then not send any data on signalling radio bearers RB0 to RB4 during the number of frames indicated in the IE "SRB delay" in the variable LATEST\_CONFIGURED\_SRB\_DELAY\_AND\_PC\_PREAMBLE or while the physical channel is not considered established;.
- 1> if the old configuration includes dedicated physical channels (CELL\_DCH state) and the UE is unable to revert to the old configuration or for FDD if the CM\_PATTERN\_ACTIVATION\_ABORTED flag is set to TRUE:
  - 2> initiate a cell update procedure according to subclause 8.3.1, using the cause "radio link failure";
  - 2> after the cell update procedure has completed successfully:
    - 3> proceed as below.
- 1> if the old configuration does not include dedicated physical channels (CELL\_FACH state):
  - 2> select a suitable UTRA cell according to [4];
  - 2> if the UE selects another cell than the cell the UE camped on upon reception of the reconfiguration message:
    - 3> initiate a cell update procedure according to subclause 8.3.1, using the cause "Cell reselection";
    - 3> after the cell update procedure has completed successfully:
      - 4> proceed as below.
- 1> transmit a failure response message as specified in subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "physical channel failure".
- 1> set the variable ORDERED RECONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The procedure ends.

#### 8.2.2.8 Cell re-selection

If the UE performs cell re-selection during the reconfiguration procedure, the UE shall:

1> initiate a cell update procedure, as specified in subclause 8.3.1;

1> continue with the reconfiguration procedure.

NOTE: After the completion of the cell update procedure and completion of the reconfiguration procedure within the UE, the UE will move to the RRC state as indicated in the reconfiguration message.

## 8.2.2.9 Transmission of a response message by the UE, failure case

The UE shall:

- 1> in case of reception of a RADIO BEARER SETUP message:
  - 2> if the radio bearer establishment procedure affects several radio bearers:
    - 3> (may) include the identities of the radio bearers for which the procedure would have been successful into the RADIO BEARER SETUP FAILURE message.
  - 2> transmit a RADIO BEARER SETUP FAILURE as response message on the DCCH using AM RLC.
- 1> in case of reception of a RADIO BEARER RECONFIGURATION message:
  - 2> if the radio bearer reconfiguration procedure affects several radio bearers:
    - 3> (may) include the identities of the radio bearers for which the procedure would have been successful into the RADIO BEARER RECONFIGURATION FAILURE message.
  - 2> transmit a RADIO BEARER RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.
- 1> in case of reception of a RADIO BEARER RECONFIGURATION message encapsulated in INTERSYSTEM HANDOVER TO UTRAN COMMAND message in GERAN *Iu mode*:
  - 2> perform the actions as specified in [53].
- 1> in case of reception of a RADIO BEARER RELEASE message:
  - 2> if the radio bearer release procedure affects several radio bearers:
    - 3> (may) include the identities of the radio bearers for which the procedure would have been successful into the RADIO BEARER RELEASE FAILURE message.
  - 2> transmit a RADIO BEARER RELEASE FAILURE as response message on the DCCH using AM RLC.
- 1> in case of reception of a TRANSPORT CHANNEL RECONFIGURATION message:
  - 2> transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.
- 1> in case of reception of a PHYSICAL CHANNEL RECONFIGURATION message:
  - 2> transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE as response message on the DCCH using AM RLC.
- 1> when the response message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if no reconfiguration attempt had occurred.

## 8.2.2.10 Reception of a response message by the UTRAN, failure case

When the UTRAN has received:

- the RADIO BEARER SETUP FAILURE message; or
- the RADIO BEARER RECONFIGURATION FAILURE message; or
- the RADIO BEARER RELEASE FAILURE message; or

- the TRANSPORT CHANNEL RECONFIGURATION FAILURE message; or
- the PHYSICAL CHANNEL RECONFIGURATION FAILURE message:

the UTRAN may restore the old and delete the new configuration. Upper layers should be notified of the failure.

The procedure ends on the UTRAN side.

## 8.2.2.11 Invalid configuration

If the variable INVALID\_CONFIGURATION is set to TRUE the UE shall:

- 1> keep the configuration existing before the reception of the message;
- 1> transmit a failure response message as specified in subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
    - 3> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
    - 3> clear that entry.
  - 2> set the IE "failure cause" to "invalid configuration".
- 1> set the variable INVALID\_CONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The procedure ends.

## 8.2.2.12 Incompatible simultaneous reconfiguration

If the table "Rejected transactions" in the variable TRANSACTIONS is set due to the received message and the variable PROTOCOL\_ERROR\_REJECT is set to FALSE, the UE shall:

- 1> not apply the configuration contained in the received reconfiguration message;
- 1> transmit a failure response message as specified in subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Rejected transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "incompatible simultaneous reconfiguration".
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The procedure ends.

#### 8.2.2.12a Incompatible simultaneous security reconfiguration

If the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION is set to TRUE due to the received reconfiguration message, the UE shall:

- 1> transmit a failure response message as specified in subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and

- 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 2> clear that entry;
- 2> set the IE "failure cause" to the cause value "incompatible simultaneous reconfiguration".
- 1> set the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION to FALSE;
- 1> continue with any ongoing processes and procedures as if the reconfiguration message was not received.

The procedure ends.

## 8.2.2.12b Cell update procedure during security reconfiguration

If:

- a cell update procedure according to subclause 8.3.1 is initiated; and
- the received reconfiguration message causes either:
  - the IE "Reconfiguration" in the variable CIPHERING\_STATUS to be set to TRUE; and/or
  - the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to be set to TRUE:

#### the UE shall:

- 1> release all radio resources;
- 1> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers; and
- 1> clear any entry for the RRC CONNECTION RELEASE message in the tables "Accepted transactions" and "Rejected transactions" in the variable TRANSACTIONS;
- 1> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 1> clear the variable ESTABLISHED\_RABS;
- 1> if the received reconfiguration message contained the IE "Ciphering mode info":
  - 2> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE; and
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable SECURITY\_MODIFICATION.
- 1> if the received reconfiguration message contained the IE "Integrity protection mode info":
  - 2> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to FALSE; and
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.
- 1> enter idle mode;
- 1> perform the actions specified in subclause 8.5.2 when entering idle mode;
- 1> and the procedure ends.
- NOTE: UTRAN should use RB Control messages to perform an SRNS relocation only in case of state transitions from CELL\_DCH to CELL\_DCH.

## 8.2.2.13 Invalid received message

If the received reconfiguration message contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit a failure response message as specified in subclause 8.2.2.9, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Rejected transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to the cause value "protocol error";
  - 2> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.

The procedure ends.

## 8.2.2.14 Radio link failure

If the criteria for radio link failure are met in the old configuration during the reconfiguration procedure as specified in subclause 8.5.6, the UE shall:

- 1> if UE would have entered CELL\_PCH or URA\_PCH as a result of this reconfiguration procedure and UE has already submitted a response message to lower layers:
  - 2> act as if the reconfiguration message was not received;
  - 2> initiate a cell update procedure according to subclause 8.3.1, using the cause "radio link failure";
  - 2> the procedure ends.

NOTE: UTRAN should consider the reconfiguration procedure as unsuccessful in this case even if a success response message had been received.

- 1> if the UE would have remained in CELL\_DCH state as a result of this reconfiguration procedure:
  - 2> initiate a cell update procedure according to subclause 8.3.1, using the cause "radio link failure";
  - 2> after the cell update procedure has completed successfully:
    - 3> transmit a failure response message as specified in subclause 8.2.2.9, setting the information elements as specified below:
      - 4> include the IE "RRC transaction identifier"; and
      - 4> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
      - 4> clear that entry;
      - 4> set the IE "failure cause" to "physical channel failure".
    - 3> act as if the reconfiguration message was not received;
    - 3> the procedure ends.

If the criteria for radio link failure are met in the new configuration during the reconfiguration procedure (i.e. while UE is waiting for RLC acknowledgement for a response message.) as specified in subclause 8.5.6, the UE shall:

1> if the received reconfiguration causes either:

- the IE "Reconfiguration" in the variable CIPHERING\_STATUS to be set to TRUE; and/or
- the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to be set to TRUE:
- 2> perform the actions specified in subclause 8.2.2.12b.

#### 1> else, the UE should:

- 2> release all its radio resources;
- 2> indicate the release of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
- 2> clear any entry for the RRC CONNECTION RELEASE message in the tables "Accepted transactions" and "Rejected transactions" in the variable TRANSACTIONS;
- 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 2> clear the variable ESTABLISHED RABS;
- 2> enter idle mode;
- 2> perform the actions specified in subclause 8.5.2 when entering idle mode; and
- 2> the procedure ends.

## 8.2.3 Radio bearer release

See subclause 8.2.2 (Reconfiguration procedures).

# 8.2.4 Transport channel reconfiguration

See subclause 8.2.2 (Reconfiguration procedures).

# 8.2.5 Transport format combination control

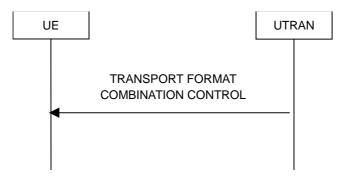


Figure 8.2.5-1: Transport format combination control, normal flow

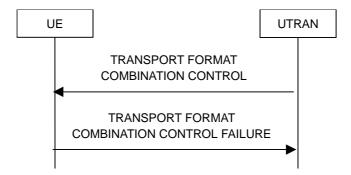


Figure 8.2.5-2: Transport format combination control, failure case

#### 8.2.5.1 General

The transport format combination control procedure is used to control the allowed uplink transport format combinations within the transport format combination set.

#### 8.2.5.2 Initiation

To initiate the transport format combination control procedure, the UTRAN transmits the TRANSPORT FORMAT COMBINATION CONTROL message on the downlink DCCH using AM, UM or TM RLC. When not stated otherwise elsewhere, the UTRAN may initiate the transport format combination control procedure also when another procedure is ongoing, and in that case the state of the latter procedure shall not be affected.

To change the sub-set of allowed transport format combinations, the UTRAN should:

1> set the allowed TFCs in the IE "Transport Format Combination subset" ("TFC subset"). The UTRAN may specify the duration for which a new TFC sub-set applies by using the IE "TFC Control duration" and independently may specify the time at which a new TFC sub-set shall be applied using the IE "Activation time for TFC subset".

To remove completely the previous restrictions of allowed transport format combinations, the UTRAN should:

1> set the IE "full transport format combination set " in the IE "TFC subset".

# 8.2.5.3 Reception of a TRANSPORT FORMAT COMBINATION CONTROL message by the UE

If the TRANSPORT FORMAT COMBINATION CONTROL message was received on AM RLC or UM RLC, the UE shall:

- 1> act upon all received information elements as specified in 8.6, unless specified otherwise in the following;
- 1> perform the actions for the transport format combination subset specified in the IE "DPCH/PUSCH TFCS in uplink" according to subclause 8.6.5.3;
- 1> if the message is received in CELL\_FACH state, and the IE "TFC Control duration" or the IE "Activation time for TFC subset" is present in the message:
  - 2> set the variable INVALID CONFIGURATION to TRUE.
- 1> if the variable INVALID\_CONFIGURATION is set to FALSE:
  - 2> if the IE "TFC Control duration" is included in the message:
    - 3> store the value of the IE "TFC Control duration" in the IE "Duration" in the variable TFC\_SUBSET;
    - 3> set the IE "Current TFC subset" (for the CCTrCH indicated by the IE "TFCS Id" in case of TDD) in the variable TFC\_SUBSET to the value of the IE "Transport format combination subset";
    - 3> at the CFN indicated by IE "Activation time for TFC subset" apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC\_SUBSET for the number of (10 ms) frames specified in the IE "Duration";
    - 3> at the end of the time period defined by the IE "Duration"in the variable TFC\_SUBSET:
      - 4> if the IE "Current TFC subset" (for the CCTrCH indicated by the IE "TFCS Id" in case of TDD) in the variable TFC\_SUBSET has not subsequently been changed by another message:
        - 5> set the value of the IE "Current TFC subset" to the value of the IE "Default TFC subset" in the variable TFC\_SUBSET;
        - 5> clear the IE "Duration" in the variable TFC\_SUBSET;
        - 5> apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC\_SUBSET;

- 2> if the IE "TFC Control duration" is not included in the message:
  - 3> clear the value of the IE "Duration" in the variable TFC\_SUBSET;
  - 3> set both the IE "Current TFC subset" and the IE "Default TFC subset" (for the CCTrCH indicated by the IE "TFCS Id" in case of TDD) in the variable TFC\_SUBSET to the value of the IE "Transport format combination subset":
  - 3> at the CFN indicated by the IE "Activation time for TFC subset" apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC\_SUBSET.
- 2> when the UE enters a state other than CELL\_DCH state after the reception of the message:
  - 3> if the CFN indicated by IE "Activation time for TFC subset" has been reached and the time period defined by the IE "Duration" in the variable TFC\_SUBSET has not been reached:
    - 4> if the IE "Current TFC subset" (for the CCTrCH indicated by the IE "TFCS Id" in case of TDD) in the variable TFC\_SUBSET has not subsequently been changed by another message:
      - 5> set the value of the IE "Current TFC subset" to the value of the IE "Default TFC subset" in the variable TFC\_SUBSET;
      - 5> clear the IE "Duration" in the variable TFC\_SUBSET;
      - 5> apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC\_SUBSET.
  - 3> if the CFN indicated by IE "Activation time for TFC subset" has not been reached:
    - 4> if the IE "TFC Control duration" is not included in the message:
      - 5> apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC\_SUBSET.
    - 4> if the IE "TFC Control duration" is included in the message, and if the IE "Current TFC subset" (for the CCTrCH indicated by the IE "TFCS Id" in case of TDD) in the variable TFC\_SUBSET has not subsequently been changed by another message:
      - 5> set the value of the IE "Current TFC subset" to the value of the IE "Default TFC subset" in the variable TFC SUBSET;
      - 5> clear the IE "Duration" in the variable TFC SUBSET;
      - 5> apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC SUBSET.

#### If the TRANSPORT FORMAT COMBINATION CONTROL message was received on TM RLC, the UE shall:

- 1> if the IE "TFC subset identity" identifies one of the TFC subsets stored in the IE "TFC subset list" in the variable TFC SUBSET:
  - 2> perform the actions as specified in subclause 8.6.5.3;
  - 2> if the variable INVALID\_CONFIGURATION is set to FALSE:
    - 3> in the variable TFC\_SUBSET, set the IE "Current TFC subset" and the IE "default TFC subset" to the value of the IE "TFC subset" in "TFC subset list" which is identified by the IE "TFC subset identity";
    - 3> clear the IE "Duration" in the variable TFC\_SUBSET;
    - 3> apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC\_SUBSET.
- 1> if the IE "TFC subset identity" is greater than the maximum number of TFC subsets stored in the IE "TFC subset list" in the variable TFC\_SUBSET:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.

NOTE: The UTRAN should only send the TRANSPORT FORMAT COMBINATION CONTROL message on TM RLC in order to control the rate of TM RBs (for example, carrying multi-rate AMR or WB-AMR) otherwise the UE behaviour is not specified.

#### The UE shall:

- 1> clear the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> and the procedure ends.

## 8.2.5.4 Invalid configuration

If the variable INVALID\_CONFIGURATION is set to TRUE due to the received TRANSPORT FORMAT COMBINATION CONTROL message the UE shall:

- 1> if the TRANSPORT FORMAT COMBINATION CONTROL message was received on AM RLC:
  - 2> keep the TFC subset existing before the TRANSPORT FORMAT COMBINATION CONTROL message was received;
  - 2> transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC:
  - 2> set the IE "RRC transaction identifier" in the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to "invalid configuration";
  - 2> when the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message has been submitted to lower layers for transmission the procedure ends.
- 1> if the TRANSPORT FORMAT COMBINATION CONTROL message was received on UM RLC or TM RLC:
  - 2> ignore the TRANSPORT FORMAT COMBINATION CONTROL message;
  - 2> clear the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS.

## 8.2.5.5 Invalid TRANSPORT FORMAT COMBINATION CONTROL message

If the TRANSPORT FORMAT COMBINATION CONTROL message was received on AM RLC or UM RLC and contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the uplink DCCH using AM RLC setting the information elements as specified below:
  - 2> set the IE "RRC transaction identifier" in the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the TRANSPORT FORMAT COMBINATION CONTROL message in the table "Rejected transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to the cause value "protocol error";
  - 2> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.

- 1> when the TRANSPORT FORMAT COMBINATION CONTROL FAILURE message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid TRANSPORT FORMAT COMBINATION CONTROL message has not been received;
  - 2> and the procedure ends.

If the TRANSPORT FORMAT COMBINATION CONTROL message was received on TM RLC and contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> ignore the invalid TRANSPORT FORMAT COMBINATION CONTROL message as if it has not been received:
- 1> the procedure ends.

## 8.2.6 Physical channel reconfiguration

See subclause 8.2.2 Reconfiguration procedures.

## 8.2.7 Physical Shared Channel Allocation [TDD only]



Figure 8.2.7-1: Physical Shared Channel Allocation

## 8.2.7.1 General

The purpose of this procedure is to allocate radio resources to USCH and/or DSCH transport channels in TDD mode, for use by a UE. This procedure can also be used to indicate to the UE, that a PUSCH allocation is pending, in order to prevent further capacity requests from the UE.

UEs are not required to receive FACH and DSCH simultaneously, i.e. if resources are allocated to DSCH the FACH reception may be suspended.

#### 8.2.7.2 Initiation

To initiate the Physical Shared Channel Allocation procedure, the UTRAN sends the "PHYSICAL SHARED CHANNEL ALLOCATION" message on the downlink SHCCH or on the downlink DCCH using UM RLC. The DSCH-RNTI shall be included for UE identification, if the message is sent on the SHCCH.

# 8.2.7.3 Reception of a PHYSICAL SHARED CHANNEL ALLOCATION message by the UE

Upon reception of a "PHYSICAL SHARED CHANNEL ALLOCATION" message, if the message is received on the downlink SHCCH the UE shall:

- 1> check the DSCH-RNTI to see if the UE is addressed by the message;
- 1> if the UE is addressed by the message, or if the message is received on the downlink DCCH:
  - 2> perform the following actions.
- 1> otherwise:

- 2> ignore the message.
- 1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:
- 1> if the IE "ISCP Timeslot list" is included:
  - 2> store the timeslot numbers given there for future Timeslot ISCP measurements and reports in the variable PHYSICAL\_SHARED\_CHANNEL\_CONFIGURATION.
- 1> if the IE "PDSCH capacity allocation info" is included:
  - 2> configure the physical resources used for the downlink CCTrCH given by the IE "TFCS ID" according to the following:
    - 3> if the CHOICE "Configuration" has the value "Old configuration":
      - 4> if the UE has stored a PDSCH configuration in the variable PHYSICAL\_SHARED\_CHANNEL\_CONFIGURATION with the identity given by the IE "PDSCH Identity":
        - 5> configure the physical resources according to that configuration.
      - 4> otherwise:
        - 5> ignore the IE "PDSCH capacity allocation info".
    - 3> if the CHOICE "Configuration" has the value "New configuration":
      - 4> configure the physical resources according to the information given in IE "PDSCH Info". If IE "Common timeslot info" or IE "PDSCH timeslots and codes" IE are not present in IE "PDSCH Info":
        - 5> reuse the configuration stored in the variable PHYSICAL\_SHARED\_CHANNEL\_CONFIGURATION for this CCTrCH.
      - 4> if the IE "PDSCH Identity" is included:
        - 5> store the new configuration in the variable PHYSICAL\_SHARED\_CHANNEL\_CONFIGURATION using that identity.
  - 2> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration";
  - 2> if the IE "Confirm request" has the value "Confirm PDSCH" and IE "PDSCH Identity" is included in IE "PDSCH capacity allocation info":
    - 3> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.
- 1> if the IE "PUSCH capacity allocation info" is included:
  - 2> stop the timer T310, if running;
  - 2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation pending":
    - 3> start the timer T311.
  - 2> if the CHOICE "PUSCH allocation" has the value "PUSCH allocation assignment":
    - 3> stop the timer T311, if running;
    - 3> configure the physical resources used for the uplink CCTrCH given by the IE "TFCS ID" according to the following:
      - 4> if the CHOICE "Configuration" has the value "Old configuration":
        - 5> if the UE has stored a PUSCH configuration with the identity given by the IE "PUSCH Identity" in the variable PHYSICAL\_SHARED\_CHANNEL\_CONFIGURATION:

- 6> configure the physical resources according to that configuration.
- 5> otherwise:
  - 6> ignore the IE "PUSCH capacity allocation info".
- 4> if the CHOICE "Configuration" has the value "New configuration", the UE shall:
  - 5> configure the physical resources according to the information given in IE "PUSCH Info". If IE "Common timeslot info" or IE "PUSCH timeslots and codes" is not present in IE "PUSCH Info":
    - 6> reuse the configuration stored in the variable PHYSICAL\_SHARED\_CHANNEL\_CONFIGURATION for this CCTrCH.
  - 5> if the IE "PUSCH Identity" is included:
    - 6> store the new configuration in the variable PHYSICAL\_SHARED\_CHANNEL\_CONFIGURATION using that identity.
- 3> if the IE "PUSCH power control info" is present in this message and includes the parameter "UL target SIR" for 3.84 Mcps TDD or 7.68 Mcps TDD, or the parameters "PRX<sub>PUSCHdes</sub>" and "Beacon PL Est." and "TPC Step Size" for 1.28 Mcps TDD, or the parameters are stored in the variable PHYSICAL SHARED CHANNEL CONFIGURATION for this CCTrCH:
  - 4> start using the new configuration at the CFN specified by the IE "Allocation activation time", and use that for the duration given by the IE "Allocation duration".
- 3> otherwise:
  - 4> ignore the IE "PUSCH capacity allocation info".
- 3> if the IE "PUSCH power control info" is present in this message and includes the parameter "UL target SIR" for 3.84 Mcps TDD or 7.68 Mcps TDD, or the parameters "PRX<sub>PUSCHdes</sub>" and/or "Beacon PL Est." and/or "TPC Step Size" for 1.28 Mcps TDD:
  - 4> replace the parameters "UL target SIR" or "PRX<sub>PUSCHdes</sub>" or "TPC Step Size" stored in the variable PHYSICAL SHARED CHANNEL CONFIGURATION for this CCTrCH with the signalled values.
- 3> if the IE "Traffic volume report request " is included:
  - 4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8 at the time indicated by the IE "Traffic volume report request".
- 3> if the IE "Confirm request" has the value "Confirm PUSCH" and IE "PUSCH Identity" is included in IE "PUSCH capacity allocation info":
  - 4> initiate the PUSCH CAPACITY REQUEST procedure as described in subclause 8.2.8.
- 3> determine the TFCS subset and hence the TFCI values which are possible given the PUSCH allocation for that CCTrCH;
- 3> configure the MAC-c/sh in the UE with this TFCS restriction if necessary;
- 3> transmit USCH Transport Block Sets as required, within the TFCS limits given by the PUSCH allocation.
- NOTE: If the UE has just entered a new cell and System Information Block Type 6 has not yet been scheduled, PUSCH/PDSCH information should be specified in the allocation message.

#### The UE shall:

- 1> clear the entry for the PHYSICAL SHARED CHANNEL ALLOCATION message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> and the procedure ends.

## 8.2.7.4 Invalid PHYSICAL SHARED CHANNEL ALLOCATION message

If the UE receives a PHYSICAL SHARED CHANNEL ALLOCATION message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> ignore the invalid PHYSICAL SHARED CHANNEL ALLOCATION message;
- 1> submit the PUSCH CAPACITY REQUEST message for transmission on the uplink SHCCH, setting the information elements in the message as specified in subclause 8.2.8.3;
- 1> reset counter V310;
- 1> start timer T310;
- 1> proceed as described in subclause 8.2.8.

## 8.2.8 PUSCH capacity request [TDD only]

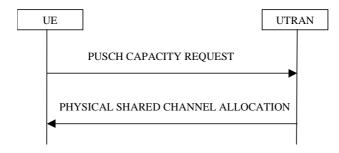


Figure 8.2.8-1: PUSCH Capacity request procedure

### 8.2.8.1 General

With this procedure, the UE transmits its request for PUSCH resources to the UTRAN. In the normal case, the UTRAN responds with a PHYSICAL SHARED CHANNEL ALLOCATION message, which either allocates the requested PUSCH resources, and/or allocates a PDSCH resource, or may just serve as an acknowledgement, indicating that PUSCH allocation is pending.

This procedure can also be used to acknowledge the reception of a PHYSICAL SHARED CHANNEL ALLOCATION message, or to indicate a protocol error in that message.

With the PUSCH CAPACITY REQUEST message, the UE can request capacity for one or more USCH.

### 8.2.8.2 Initiation

This procedure is initiated:

- 1> in the CELL\_FACH or CELL\_DCH state;
- 1> and when at least one RB using USCH has been established;
- 1> and when the UE sees the requirement to request physical resources (PUSCH) for an USCH channel or there is the need to reply to a PHYSICAL SHARED CHANNEL ALLOCATION message as described in clause 8.2.7 (i.e. to confirm the reception of a message, if requested to do so, or to indicate a protocol error).

The procedure can be initiated if:

- Timer T311 is not running.
- The timer T310 (capacity request repetition timer) is not running.

The UE shall:

1> set the IEs in the PUSCH CAPACITY REQUEST message according to subclause 8.2.8.3;

- 1> if the procedure is triggered to reply to a previous PHYSICAL SHARED CHANNEL ALLOCATION message by the IE "Confirm request" set to "Confirm PUSCH" and the IE "PUSCH capacity allocation info" is not present:
  - 2> transmit the PUSCH CAPACITY REQUEST message on RACH.
- 1> else:
  - 2> transmit the PUSCH CAPACITY REQUEST message on the uplink SHCCH.
- 1> set counter V310 to 1;
- 1> start timer T310.

## 8.2.8.3 PUSCH CAPACITY REQUEST message contents to set

With one PUSCH CAPACITY REQUEST message, capacity for one or more USCH can be requested. It shall include these information elements:

- 1> DSCH-RNTI to be used as UE identity if the message is sent on RACH;
- 1> Traffic volume measured results for each radio bearer satisfying the reporting criteria as specified in the MEASUREMENT CONTROL procedure (if no radio bearer satisfies the reporting criteria, traffic volume measured results shall not be included). These results shall include:
  - 2> Radio Bearer ID of the Radio Bearer being reported;
  - 2> RLC buffer payload for these radio bearers, as specified by the MEASUREMENT CONTROL procedure.

#### The UE shall:

- 1> if the initiation of the procedure is triggered by the IE "Traffic volume report request" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message:
  - 2> report the traffic volume measurement result for the radio bearer mapped on USCH transport channel specified in the received message. These results shall include:
    - 3> Radio Bearer ID of the Radio Bearer being reported;
    - 3> RLC buffer payload for this radio bearer.
- 1> if the initiation of the procedure is triggered by the IE "Confirm request" set to "Confirm PDSCH" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message and the IE "PUSCH capacity allocation info" is present in this message:
  - 2> set the CHOICE "Allocation confirmation" to "PDSCH Confirmation" with the value given in the IE "PDSCH Identity" stored in the variable PHYSICAL\_SHARED\_CHANNEL\_CONFIGURATION.
- 1> if the initiation of the procedure is triggered by the IE "Confirm request" set to "Confirm PUSCH" in a previously received PHYSICAL SHARED CHANNEL ALLOCATION message:
  - 2> set the CHOICE "Allocation confirmation" to "PUSCH Confirmation" with the value given in the IE "PUSCH Identity" stored in the variable PHYSICAL\_SHARED\_CHANNEL\_CONFIGURATION.
- 1> if the variable PROTOCOL\_ERROR\_REJECT is set to TRUE:
  - 2> include the IE "RRC transaction identifier" in the response message transmitted below; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the PHYSICAL SHARED CHANNEL ALLOCATION message in the table "Rejected transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "protocol error indicator" to TRUE;
  - 2> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.

- 1> if the value of the variable PROTOCOL\_ERROR\_ REJECT is FALSE:
  - 2> set the IE "Protocol error indicator" to FALSE.

As an option, the message may include IE "Timeslot ISCP" and IE "Primary CCPCH RSCP".

The timeslots for which "Timeslot ISCP" may be reported shall have been configured with a previous PHYSICAL SHARED CHANNEL ALLOCATION message and stored in the variable PHYSICAL\_SHARED\_CHANNEL\_CONFIGURATION.

"Primary CCPCH RSCP" is reported when requested with a previous PHYSICAL SHARED CHANNEL ALLOCATION message.

## 8.2.8.4 Reception of a PUSCH CAPACITY REQUEST message by the UTRAN

Upon receiving a PUSCH CAPACITY REQUEST message with traffic volume measurement included for at least one radio bearer, the UTRAN should initiate the PHYSICAL SHARED CHANNEL ALLOCATION procedure, either for allocating PUSCH or PDSCH resources as required, or just as an acknowledgement, indicating a pending PUSCH allocation, as described in subclause 8.2.7.

### 8.2.8.5 T310 expiry

Upon expiry of timer T310, the UE shall:

- 1> if V310 is smaller than N310:
  - 2> transmit a new PUSCH CAPACITY REQUEST message on the Uplink SHCCH;
  - 2> restart timer T310;
  - 2> increment counter V310;
  - 2> set the IEs in the PUSCH CAPACITY REQUEST message as specified in subclause 8.2.8.3.
- 1> if V310 is greater than or equal to N310:
  - 2> the procedure ends.

### 8.2.9 Void

# 8.2.10 Uplink Physical Channel Control [TDD only]

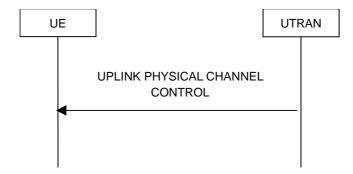


Figure 8.2.10-1: Uplink Physical Channel Control

#### 8.2.10.1 General

The uplink physical channel control procedure is used in TDD to control the uplink outer loop power control and timing advance running in the UE.

#### 8.2.10.2 Initiation

The UTRAN initiates the procedure by transmitting the UPLINK PHYSICAL CHANNEL CONTROL message on the downlink DCCH using AM or UM RLC in order to update parameters for uplink open loop power control in the UE for one CCTrCH or to inform the UE about a new timing advance value to be applied. Especially, uplink interference information measured by the UTRAN can be included for the uplink timeslots used for the CCTrCH.

## 8.2.10.3 Reception of UPLINK PHYSICAL CHANNEL CONTROL message by the UE

Upon reception of the UPLINK PHYSICAL CHANNEL CONTROL message, the UE shall:

1> act upon all received information elements as specified in subclause 8.6.

In 1.28 Mcps TDD, if the IE "Uplink DPCH Power Control Info" and IE "PRX<sub>HS-SICH</sub>" and IE "TPC step size" are transmitted, this information shall be taken into account by the UE for uplink open loop power control and for uplink closed loop power control as described in subclause 8.6.6.11, and the "PRX<sub>HS-SICH</sub>" shall be taken into account by the UE for open loop power control as described in subclause 8.5.7 and the "TPC step size" for closed loop power control on HS-SICH.

In 3.84 Mcps TDD or 7.68 Mcps TDD, if the IEs "Uplink DPCH Power Control Info", "PRACH Constant Value", "PUSCH Constant Value", "HS-SICH Power Control Info", "Alpha" or IE group "list of UL Timeslot Interference" are transmitted, this information shall be taken into account by the UE for uplink open loop power control as specified in subclause 8.5.7. If the UE is capable of using IPDLs for UE positioning, the IE "IPDL-Alpha" shall be used instead of the IE "Alpha". If the IE "IPDL-Alpha" parameter is not present, the UE shall use IE "Alpha".

If the IE Special Burst Scheduling is transmitted the UE shall:

1> use the new value for the "Special Burst Generation Period".

The UE shall:

- 1> clear the entry for the UPLINK PHYSICAL CHANNEL CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS;
- 1> and the procedure ends.

## 8.2.10.4 Invalid UPLINK PHYSICAL CHANNEL CONTROL message

If the UE receives a UPLINK PHYSICAL CHANNEL CONTROL message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC, setting the information elements as specified below:
  - 2> include the IE "Identification of received message"; and
  - 2> set the IE "Received message type" to UPLINK PHYSICAL CHANNEL CONTROL; and
  - 2> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the UPLINK PHYSICAL CHANNEL CONTROL message in the table "Rejected transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.
- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid UPLINK PHYSICAL CHANNEL CONTROL message has not been received.

## 8.2.11 Physical channel reconfiguration failure



Figure 8.2.11-1: Physical channel reconfiguration failure in case of runtime configuration error

#### 8.2.11.1 General

The physical channel reconfiguration failure procedure is used to indicate to the network a runtime configuration error in the UE.

## 8.2.11.2 Runtime error due to overlapping compressed mode configurations

When the UE has received from the UTRAN the configurations of several compressed mode transmission gap pattern sequences, and if several of these patterns are to be simultaneously active, the UE shall check to see if these simultaneously active transmission gap pattern sequences create transmission gaps in the same frame. An illegal overlap is created if two or more transmission gap pattern sequences create transmission gaps in the same frame, irrespective of the gaps are created in uplink or downlink.

If the parallel transmission gap pattern sequences create an illegal overlap, the UE shall:

- 1> delete the overlapping transmission gap pattern sequence configuration stored in the variable TGPS\_IDENTITY, which is associated with the highest value of IE "TGPSI";
- 1> transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the information elements as specified below:
  - 2> not include the IE "RRC transaction identifier";
  - 2> set the cause value in IE "failure cause" to value "compressed mode runtime error".
- 1> terminate the inter-frequency and/or inter-RAT measurements corresponding to the deleted transmission gap pattern sequence;
- 1> when the PHYSICAL CHANNEL RECONFIGURATION FAILURE message has been submitted to lower layers for transmission:
  - 2> the procedure ends.

#### 8.2.11.3 Void

# 8.3 RRC connection mobility procedures

# 8.3.1 Cell and URA update procedures

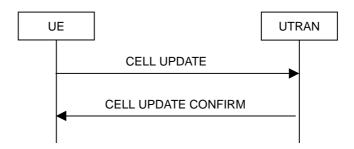


Figure 8.3.1-1: Cell update procedure, basic flow

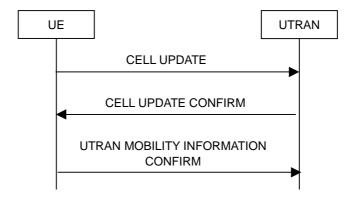


Figure 8.3.1-2: Cell update procedure with update of UTRAN mobility information

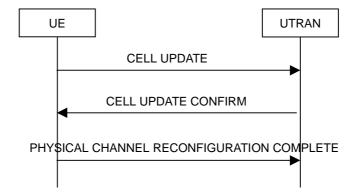


Figure 8.3.1-3: Cell update procedure with physical channel reconfiguration

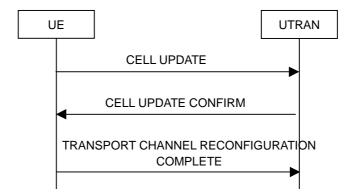


Figure 8.3.1-4: Cell update procedure with transport channel reconfiguration

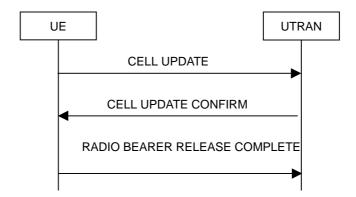


Figure 8.3.1-5: Cell update procedure with radio bearer release

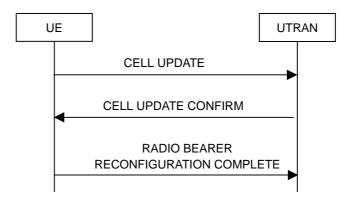


Figure 8.3.1-6: Cell update procedure with radio bearer reconfiguration

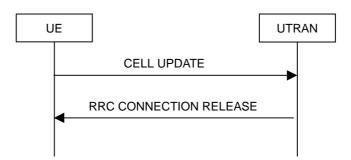


Figure 8.3.1-7: Cell update procedure, failure case

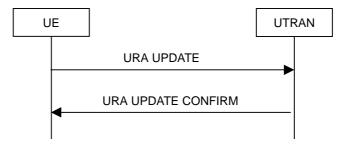


Figure 8.3.1-8: URA update procedure, basic flow

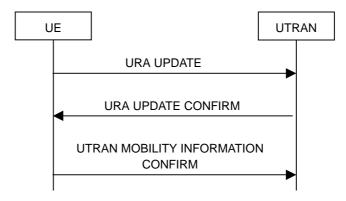


Figure 8.3.1-9: URA update procedure with update of UTRAN mobility information

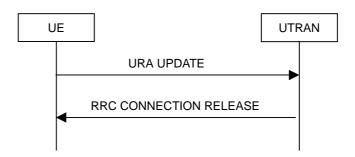


Figure 8.3.1-10: URA update procedure, failure case

#### 8.3.1.1 General

The URA update and cell update procedures serve several main purposes:

- to notify UTRAN after re-entering service area in the URA PCH or CELL PCH state;
- to notify UTRAN of an RLC unrecoverable error [16] on an AM RLC entity;
- to be used as a supervision mechanism in the CELL\_FACH, CELL\_PCH, or URA\_PCH state by means of periodical update.

In addition, the URA update procedure also serves the following purpose:

- to retrieve a new URA identity after cell re-selection to a cell not belonging to the current URA assigned to the UE in URA\_PCH state.

In addition, the cell update procedure also serves the following purposes:

- to update UTRAN with the current cell the UE is camping on after cell reselection;
- to act on a radio link failure in the CELL\_DCH state;
- to act on the transmission failure of the UE CAPABILITY INFORMATION message;
- for FDD, if the variable H\_RNTI is not set, and for TDD: when triggered in the URA\_PCH or CELL\_PCH state, to notify UTRAN of a transition to the CELL\_FACH state due to the reception of UTRAN originated paging or due to a request to transmit uplink data;
- to count the number of UEs in URA\_PCH, CELL\_PCH and CELL\_FACH that are interested to receive an MBMS transmission;
- when triggered in the URA\_PCH, CELL\_PCH and CELL\_FACH state, to notify UTRAN of the UEs interest to receive an MBMS service;
- to request the MBMS P-T-P RB setup by the UE in CELL\_PCH, URA\_PCH and CELL\_FACH state.

The URA update and cell update procedures may:

- 1> include an update of mobility related information in the UE;
- 1> cause a state transition from the CELL\_FACH state to the CELL\_DCH, CELL\_PCH or URA\_PCH states or idle mode.

The cell update procedure may also include:

- a re-establish of AM RLC entities;
- a radio bearer release, radio bearer reconfiguration, transport channel reconfiguration or physical channel reconfiguration.

#### 8.3.1.2 Initiation

A UE shall initiate the cell update procedure in the following cases:

- 1> Uplink data transmission:
  - 2> for FDD, if the variable H RNTI is not set, and for TDD:
    - 3> if the UE is in URA\_PCH or CELL\_PCH state; and
    - 3> if timer T320 is not running:
      - 4> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:
        - 5> perform cell update using the cause "uplink data transmission".
    - 3> else:
      - 4> if the variable ESTABLISHMENT\_CAUSE is set:
        - 5> perform cell update using the cause "uplink data transmission".

## 1> Paging response:

- 2> if the criteria for performing cell update with the cause specified above in the current subclause are not met;
- 2> if the UE in URA\_PCH or CELL\_PCH state, receives a PAGING TYPE 1 message fulfilling the conditions for initiating a cell update procedure specified in subclause 8.1.2.3:
  - 3> perform cell update using the cause "paging response".

#### 1> Radio link failure:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:
  - 3> if the UE is in CELL\_DCH state and the criteria for radio link failure are met as specified in subclause 8.5.6; or
  - 3> if the transmission of the UE CAPABILITY INFORMATION message fails as specified in subclause 8.1.6.6:
    - 4> perform cell update using the cause "radio link failure".

## 1> MBMS ptp RB request:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE is in URA\_PCH, Cell\_PCH or Cell\_FACH state; and
- 2> if timer T320 is not running; and
- 2> if the UE should perform cell update for MBMS ptp radio bearer request as specified in subclause 8.6.9.6:

3> perform cell update using the cause "MBMS ptp RB request".

#### 1> Re-entering service area:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE is in CELL\_FACH or CELL\_PCH state; and
- 2> if the UE has been out of service area and re-enters service area before T307 or T317 expires:
  - 3> perform cell update using the cause "re-entering service area".

#### 1> RLC unrecoverable error:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE detects RLC unrecoverable error [16] in an AM RLC entity:
  - 3> perform cell update using the cause "RLC unrecoverable error".

#### 1> Cell reselection:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met:
  - 3> if the UE is in CELL\_FACH or CELL\_PCH state and the UE performs cell re-selection; or
  - 3> if the UE is in CELL\_FACH state and the variable C\_RNTI is empty:
    - 4> perform cell update using the cause "cell reselection".

#### 1> Periodical cell update:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met: and
- 2> if the UE is in CELL\_FACH or CELL\_PCH state; and
- 2> if the timer T305 expires; and
- 2> if the criteria for "in service area" as specified in subclause 8.5.5.2 are fulfilled; and
- 2> if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity":
  - 3> perform cell update using the cause "periodical cell update".

#### 1> MBMS reception:

- 2> if none of the criteria for performing cell update with the causes specified above in the current subclause is met; and
- 2> if the UE is in URA\_PCH, Cell\_PCH or Cell\_FACH state; and
- 2> if the UE should perform cell update for MBMS counting as specified in subclause 8.7.4:
  - 3> perform cell update using the cause "MBMS reception".

#### A UE in URA\_PCH state shall initiate the URA update procedure in the following cases:

#### 1> URA reselection:

- 2> if the UE detects that the current URA assigned to the UE, stored in the variable URA\_IDENTITY, is not present in the list of URA identities in system information block type 2; or
- 2> if the list of URA identities in system information block type 2 is empty; or

- 2> if the system information block type 2 can not be found:
  - 3> perform URA update using the cause "change of URA".
- 1> Periodic URA update:
  - 2> if the criteria for performing URA update with the causes as specified above in the current subclause are not met:
    - 3> if the timer T305 expires and if periodic updating has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity"; or
    - 3> if the conditions for initiating an URA update procedure specified in subclause 8.1.1.6.5 are fullfilled:
      - 4> perform URA update using the cause "periodic URA update".

When initiating the URA update or cell update procedure, the UE shall:

- 1> if timer T320 is running:
  - 2> stop timer T320;
  - 2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:
    - 3> perform cell update using the cause "uplink data transmission".
  - 2> else:
    - 3> if the cell update procedure is not triggered due to Paging response or Radio link failure; and
    - 3> if the UE should perform cell update for MBMS ptp radio bearer request as specified in subclause 8.6.9.6:
      - 4> perform cell update using the cause "MBMS ptp RB request".
- 1> stop timer T319 if it is running;
- 1> stop timer T305;
- 1> for FDD:
  - 2> if the UE is in CELL\_FACH state; and
  - 2> if the IE "HS-DSCH common system information" is included in System Information Block type 5 or System Information Block type 5bis; and
  - 2> if the UE does support HS-DSCH reception in CELL\_FACH state:
    - 3> if variable H\_RNTI is not set or variable C\_RNTI is not set; or
    - 3> an unrecoverable error [16] in any of the AM RLC entities for the signalling radio bearers RB2, RB3 or RB4 is detected:
      - 4> clear variable H\_RNTI;
      - 4> clear variable C\_RNTI;
      - 4> clear any stored IEs "HARQ info";
      - 4> set variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED to TRUE;
      - 4> and start receiving the HS-DSCH transport channels mapped physical channel(s) of type HS-SCCH and HS-PDSCH, by using parameters given by the IE(s) "HS-DSCH common system information" according to the procedure in subclause 8.5.37.
    - 3> else:

- 4> receive the HS-DSCH transport channels mapped physical channel(s) of type HS-SCCH and HS-PDSCH, by using parameters given by the IE(s) "HS-DSCH common system information" according to the procedure in subclause 8.5.36.
- 1> if the UE is in CELL\_DCH state:
  - 2> in the variable RB\_TIMER\_INDICATOR, set the IE "T314 expired" and the IE "T315 expired" to FALSE;
  - 2> if the stored values of the timer T314 and timer T315 are both equal to zero; or
  - 2> if the stored value of the timer T314 is equal to zero and there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT315" and signalling connection exists only to the CS domain:
    - 3> release all its radio resources;
    - 3> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
    - 3> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
    - 3> clear the variable ESTABLISHED\_RABS;
    - 3> enter idle mode;
    - 3> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2;
    - 3> and the procedure ends.
  - 2> if the stored value of the timer T314 is equal to zero:
    - 3> release all radio bearers, associated with any radio access bearers for which in the variable ESTABLISHED RABS the value of the IE "Re-establishment timer" is set to "useT314";
    - 3> in the variable RB\_TIMER\_INDICATOR set the IE "T314 expired" to TRUE;
    - 3> if all radio access bearers associated with a CN domain are released:
      - 4> release the signalling connection for that CN domain;
      - 4> remove the signalling connection for that CN domain from the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
      - 4> indicate release (abort) of the signalling connection to upper layers;
  - 2> if the stored value of the timer T315 is equal to zero:
    - 3> release all radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT315";
    - 3> in the variable RB\_TIMER\_INDICATOR set the IE "T315 expired" to TRUE.
    - 3> if all radio access bearers associated with a CN domain are released:
      - 4> release the signalling connection for that CN domain;
      - 4> remove the signalling connection for that CN domain from the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
      - 4> indicate release (abort) of the signalling connection to upper layers;
  - 2> if the stored value of the timer T314 is greater than zero:
    - 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314":
      - 4> start timer T314.

- 3> if there are no radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314" or "useT315" and the signalling connection exists to the CS domain:
  - 4> start timer T314.
- 2> if the stored value of the timer T315 is greater than zero:
  - 3> if there are radio bearers associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT315"; or
  - 3> if the signalling connection exists to the PS domain:
    - 4> start timer T315.
- 2> for the released radio bearer(s):
  - 3> delete the information about the radio bearer from the variable ESTABLISHED\_RABS;
  - 3> when all radio bearers belonging to the same radio access bearer have been released:
    - 4> indicate local end release of the radio access bearer to upper layers using the CN domain identity together with the RAB identity stored in the variable ESTABLISHED\_RABS;
    - 4> delete all information about the radio access bearer from the variable ESTABLISHED\_RABS.
- 2> move to CELL FACH state;
- 2> select a suitable UTRA cell on the current frequency according to [4];
- 2> for TDD; or
- 2> for FDD, if the UE does not support HS-DSCH reception in CELL\_FACH state; or
- 2> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 3> select PRACH according to subclause 8.5.17;
  - 3> select Secondary CCPCH according to subclause 8.5.19;
  - 3> use the transport format set given in system information as specified in subclause 8.6.5.1;
  - 3> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.
- 2> else:
  - 3> select PRACH according to subclause 8.5.17 and:
    - 4> use for the PRACH the transport format set given in system information as specified in subclause 8.6.5.1.
  - 3> clear variable H\_RNTI;
  - 3> clear any stored IEs "HARQ info";
  - 3> reset the MAC-ehs entity [15];
  - 3> set variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED to TRUE;
  - 3> and start receiving the HS-DSCH according to the procedure in subclause 8.5.37.
- 2> set the variable ORDERED\_RECONFIGURATION to FALSE.
- 1> set the variables PROTOCOL\_ERROR\_INDICATOR, FAILURE\_INDICATOR, UNSUPPORTED CONFIGURATION and INVALID CONFIGURATION to FALSE;

- 1> set the variable CELL\_UPDATE\_STARTED to TRUE;
- 1> if any IEs releated to HS-DSCHare stored in the UE:
  - 2> clear any stored IE "Downlink HS-PDSCH information";
  - 2> for 1.28Mcps TDD, clear the IE "HS-PDSCH Midamble Configuration" and the IE "HS-SCCH Set Configuration" in the IE "DL Multi Carrier Information";
  - 2> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.
- 1> if any IEs related to E-DCH are stored in the UE:
  - 2> clear any stored IE "E-DCH info";
  - 2> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.
- 1> if any of the IEs "DTX-DRX timing information" or "DTX-DRX information" are stored in the UE:
  - 2> determine the value for the DTX\_DRX\_STATUS variable and take the corresponding actions as described in subclause 8.5.34.
- 1> if the IE "HS-SCCH less information" is stored in the UE:
  - 2> determine the value for the HS\_SCCH\_LESS\_STATUS variable and take the corresponding actions as described in subclause 8.5.35.
- 1> if any IEs related to MIMO are stored in the UE:
  - 2> determine the value for the MIMO\_STATUS variable and take the corresponding actions as described in subclause 8.5.33.
- 1> if the UE is not already in CELL\_FACH state:
  - 2> move to CELL\_FACH state;
  - 2> for TDD; or
  - 2> for FDD, if the UE does not support HS-DSCH reception in CELL\_FACH state; or
  - 2> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis:
    - 3> select PRACH according to subclause 8.5.17;
    - 3> select Secondary CCPCH according to subclause 8.5.19;
    - 3> use the transport format set given in system information as specified in subclause 8.6.5.1;
    - 3> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.
  - 2> else:
    - 3> select PRACH according to subclause 8.5.17 and:
      - 4> use for the PRACH the transport format set given in system information as specified in subclause 8.6.5.1.
    - 3> if variable H\_RNTI is not set or variable C\_RNTI is not set:
      - 4> clear variable C\_RNTI;
      - 4> clear variable H\_RNTI;
      - 4> clear any stored IEs "HARQ info";

- 4> set variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED to TRUE;
- 4> and start receiving the HS-DSCH according to the procedure in subclause 8.5.37.
- 3> else:
  - 4> receive the HS-DSCH according to the procedure in subclause 8.5.36.
- 1> if the UE performs cell re-selection:
  - 2> clear the variable C\_RNTI; and
  - 2> stop using that C\_RNTI just cleared from the variable C\_RNTI in MAC;
  - 2> for FDD, if the variable H\_RNTI is set:
    - 3> clear the variable H\_RNTI; and
    - 3> stop using that H\_RNTI just cleared from the variable H\_RNTI in MAC;
    - 3> clear any stored IEs "HARQ info";
  - 2> for FDD, if the UE does support HS-DSCH reception in CELL\_FACH state and IE "HS-DSCH common system information" is included in System Information Block type 5 or System Information Block type 5bis:
    - 3> reset the MAC-ehs entity [15].
    - 3> set variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED to TRUE;
    - 3> and start receiving the HS-DSCH according to the procedure in subclause 8.5.37.
  - 2> else:
    - 3> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.
- 1> set CFN in relation to SFN of current cell according to subclause 8.5.15;
- 1> in case of a cell update procedure:
  - 2> set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
  - 2> submit the CELL UPDATE message for transmission on the uplink CCCH.
- 1> in case of a URA update procedure:
  - 2> set the contents of the URA UPDATE message according to subclause 8.3.1.3;
  - 2> submit the URA UPDATE message for transmission on the uplink CCCH.
- 1> set counter V302 to 1;
- 1> start timer T302 when the MAC layer indicates success or failure in transmitting the message.

# 8.3.1.3 CELL UPDATE / URA UPDATE message contents to set

In case of cell update procedure the UE shall transmit a CELL UPDATE message.

In case of URA update procedure the UE shall transmit a URA UPDATE message.

The UE shall set the IEs in the CELL UPDATE message as follows:

- 1> set the IE "Cell update cause" corresponding to the cause specified in subclause 8.3.1.2 that is valid when the CELL UPDATE message is submitted to lower layers for transmission;
- NOTE: During the time period starting from when a cell update procedure is initiated by the UE until when the procedure ends, additional CELL UPDATE messages may be transmitted by the UE with different causes.

- 1> if the IE "Cell update cause" is set to "uplink data transmission" and if an event triggered traffic volume measurement has been configured:
  - 2> if the TCTV is larger than the threshold in the IE "Reporting threshold" for a traffic volume measurement stored in the MEASUREMENT\_IDENTITY variable and that traffic volume measurement has "measurement identity" equal to 4, "Traffic volume event identity" equal to "4a", "Measurement validity" equal to "all states" or "all states except CELL\_DCH":
    - 3> set the IE "Traffic volume indicator" to TRUE.
  - 2> else:
    - 3> set the IE "Traffic volume indicator" to FALSE.
- 1> set the IE "U-RNTI" to the value of the variable U\_RNTI;
- 1> if the value of the variable PROTOCOL\_ERROR\_INDICATOR is TRUE:
  - 2> include the IE "RRC transaction identifier"; and
    - 3> set it to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
  - 2> include and set the IE "failure cause" to the cause value "protocol error";
  - 2> set the IE "Protocol error information" set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.
- 1> if the value of the variable FAILURE INDICATOR is TRUE:
  - 2> include the IE "RRC transaction identifier"; and
    - 3> set it to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS.
  - 2> include and set the IE "failure cause" to the value of the variable FAILURE\_CAUSE.
- 1> if the variable "LATEST\_CONFIGURED\_CN\_DOMAIN" has been initialised:
  - 2> for each CN domain for which an entry exists in the variable ESTABLISHED\_RABS or which is indicated in the variable LATEST CONFIGURED CN DOMAIN:
    - 3> include the START value calculated according to subclause 8.5.9.

#### 1> else:

- 2> include the START value for either the CS domain or the PS domain, calculated according to subclause 8.5.9.
- 1> if an unrecoverable error [16] in any of the AM RLC entities for the signalling radio bearers RB2, RB3 or RB4 is detected:
  - 2> set the IE "AM\_RLC error indication (RB2, RB3 or RB4)" to TRUE;
  - 2> set the variable AM\_RLC\_ERROR\_PENDING\_RB234 to TRUE.
- 1> otherwise:
  - 2> if the value of the variable AM\_RLC\_ERROR\_PENDING\_RB234 is TRUE:
    - 3> set the IE "AM\_RLC error indication (RB2, RB3 or RB4)" to TRUE.
  - 2> otherwise:
    - 3> set the IE "AM\_RLC error indication (RB2, RB3 or RB4)" to FALSE.
- 1> if an unrecoverable error [16] in any of the AM RLC entities for the RB5 or upward is detected:

- 2> set the IE "AM\_RLC error indication (RB>4)" to TRUE;
- 2> set the variable AM\_RLC\_ERROR\_PENDING\_RB5\_AND\_UP to TRUE.
- 1> otherwise:
  - 2> if the value of the variable AM\_RLC\_ERROR\_PENDING\_RB5\_AND\_UP is TRUE:
    - 3> set the IE "AM\_RLC error indication (RB>4)" to TRUE.
  - 2> otherwise:
    - 3> set the IE "AM\_RLC error indication (RB>4)" to FALSE.
- 1> set the IE "RB Timer indicator" to the value of the variable RB\_TIMER\_INDICATOR;
- 1> if the variable ESTABLISHMENT\_CAUSE is initialised:
  - 2> include the IE "Establishment cause" and set it to the value of the variable ESTABLISHMENT\_CAUSE;
  - 2> if the value of the variable ESTABLISHMENT\_CAUSE is set to "Originating Conversational Call" or "Emergency Call" and a CS call is being initiated:
    - 3> set the value of the IE "Call type" to "speech", "video" or "other" according to the call being initiated.
- 1> if the variable ORDERED\_RECONFIGURATION is set to TRUE:
  - 2> include the IE "Reconfiguration Status Indicator" and set it to TRUE.
- 1> if the IE "Cell update cause" is set to "radio link failure" and the UE has submitted a reconfiguration response message to RLC and the UE has not received the RLC acknowledgement for the response message:
  - 2> include the IE "Reconfiguration Status Indicator" and set it to TRUE.
- 1> if the UE supports HS-DSCH reception in CELL\_FACH state:
  - 2> include the IE "HS-PDSCH in CELL\_FACH" and set it to TRUE.
- 1> if the UE performs cell update for MBMS ptp radio bearer request as specified in subclause 8.6.9.6; and
- 1> if one or more of the MBMS services for which the UE initiates the ptp radio bearer request concerns an MBMS Selected Service:
  - 2> for each MBMS Selected Service that is indicated on MCCH and for which the UE initiates ptp radio bearer request:
    - 3> order the MBMS Selected Services such that those selected with a higher priority are listed in the IE "MBMS Selected Services Short" before those selected with a lower priority;
    - 3> include the IE "MBMS Selected Service ID" within the IE "MBMS Selected Services Short" and set it to a value in accordance with subclause 8.6.9.8.
- 1> otherwise, if the UE performs cell update for MBMS counting as specified in subclause 8.7.4; and
- 1> if one or more of the MBMS services for which the UE initiates the counting response concerns an MBMS Selected Service:
  - 2> for each MBMS Selected Service that is indicated on MCCH and for which the UE initiates the counting response:
    - 3> order the MBMS Selected Services such that those selected with a higher priority are listed in the IE "MBMS Selected Services Short" before those selected with a lower priority;
    - 3> include the IE "MBMS Selected Service ID" within the IE "MBMS Selected Services Short" and set it to a value in accordance with subclause 8.6.9.8.
- 1> if the UE included one or more "MBMS Selected Service ID" IEs:

- 2> include the IE "MBMS Modification Period identity" and set it to a value in accordance with subclause 8.5.29.
- 1> if, according to [4], the High-mobility state is applicable and it has been detected by the UE:
  - 2> include the IE "UE Mobility State Indicator" and set it to the "High-MobilityDetected" value.

#### The UE shall:

- 1> if the UE capability has changed compared to the value stored in the variable UE\_CAPABILITY\_TRANSFERRED and the variable RNC\_CAPABILITY\_CHANGE\_SUPPORT is set to TRUE:
  - 2> include the IE "Capability change indicator".
- NOTE: Transmitting the IE "Capability change indicator" does not trigger any actual changed behaviour on the part of the UE. It serves only to inform the network that the UE is requesting an opportunity to send a UE CAPABILITY INFORMATION message.

The UE shall set the IEs in the URA UPDATE message as follows:

- 1> set the IE "U-RNTI" to the value of the variable U\_RNTI;
- 1> set the IE "URA update cause" corresponding to which cause as specified in subclause 8.3.1.2 that is valid when the URA UPDATE message is submitted to lower layers for transmission;
- NOTE: During the time period starting from when a URA update procedure is initiated by the UE until when the procedure ends, additional URA UPDATE messages may be transmitted by the UE with different causes, depending on which causes are valid for the respective URA UPDATE message.
- 1> if the value of the variable PROTOCOL\_ERROR\_INDICATOR is TRUE:
  - 2 > include the IE "RRC transaction identifier"; and
    - 3> set it to the value of "RRC transaction identifier" in the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
  - 2> set the IE "Protocol error indicator" to TRUE;
  - 2> include the IE "Protocol error information" set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.
- 1> if the value of the variable PROTOCOL\_ERROR\_INDICATOR is FALSE:
  - 2> if the value of the variable INVALID\_CONFIGURATION is TRUE:
    - 3> include the IE "RRC transaction identifier"; and
    - 3> set it to the value of "RRC transaction identifier" in the entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS;
    - 3> set the IE "Protocol error indicator" to TRUE;
    - 3> include the IE "Protocol error information" set to "Information element value not comprehended".
  - 2> if the value of the variable INVALID\_CONFIGURATION is FALSE:
    - 3> set the IE "Protocol error indicator" to FALSE.
- 1> if the UE supports HS-DSCH reception in CELL\_FACH state:
  - 2> include the IE "HS-PDSCH in CELL\_FACH" and set it to TRUE.
- 1> if the UE supports HS-DSCH reception CELL\_PCH and URA\_PCH state:
  - 2> include the IE "HS-PDSCH in CELL\_PCH and URA\_PCH" and set it to TRUE.
- 1> if the UE supports Two DRX schemes in URA PCH and CELL PCH

2> include the IE "Support for Two DRX schemes in URA\_PCH and CELL\_PCH" and set it to TRUE.

## 8.3.1.4 T305 expiry and the UE detects "out of service area"

When the T305 expires and the UE detects that it is "out of service area" as specified in subclause 8.5.5.1, the UE shall

- 1> start timer T307;
- 1> act according to subclause 7.2.2.

## 8.3.1.4.1 Re-entering "in service area"

If the UE detects "in service area" according to subclause 8.5.5.2 and timer T307 or T317 is running, the UE shall:

- 1> check the value of V302; and
- 1> if V302 is equal to or smaller than N302:
  - 2> in case of a cell update procedure:
    - 3> set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
    - 3> submit the CELL UPDATE message for transmission on the uplink CCCH.
  - 2> in case of a URA update procedure:
    - 3> set the contents of the URA UPDATE message according to subclause 8.3.1.3;
    - 3> submit the URA UPDATE message for transmission on the uplink CCCH.
  - 2> increment counter V302;
  - 2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.
- 1> if V302 is greater than N302:
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
  - 2> in case of a cell update procedure:
    - 3> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
  - 2> in case of a URA update procedure:
    - 3> clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
  - 2> release all its radio resources;
  - 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
  - 2> clear the variable ESTABLISHED\_RABS;
  - 2> enter idle mode;
  - 2> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2;
  - 2> and the procedure ends.

## 8.3.1.4.2 Expiry of timer T307

When the T307 expires, the UE shall:

- 1> move to idle mode:
- 1> release all dedicated resources:
- 1> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
- 1> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 1> clear the variable ESTABLISHED\_RABS;
- 1> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2;
- 1> and the procedure ends.

## 8.3.1.5 Reception of an CELL UPDATE/URA UPDATE message by the UTRAN

When the UTRAN receives a CELL UPDATE/URA UPDATE message, the UTRAN should:

- 1> in case the procedure was triggered by reception of a CELL UPDATE:
  - 2> if SRNS relocation was performed:
    - 3> transmit a CELL UPDATE CONFIRM message on the downlink DCCH.
  - 2> otherwise:
    - 3> update the START value for each CN domain as maintained in UTRAN (refer to subclause 8.5.9) with "START" in the IE "START list" for the CN domain as indicated by "CN domain identity" in the IE "START list":
    - 3> transmit a CELL UPDATE CONFIRM message on the downlink DCCH or optionally on the CCCH but only if ciphering is not required; and
    - 3> optionally set the IE "RLC re-establish indicator (RB2, RB3 and RB4)" and/or the IE "RLC re-establish indicator (RB5 and upwards)" to TRUE to request a RLC re-establishment in the UE, in which case the corresponding RLC entities should also be re-established in UTRAN; or
- 1> in case the procedure was triggered by reception of a URA UPDATE:
  - 2> if SRNS relocation was performed:
    - 3> transmit a URA UPDATE CONFIRM message on the downlink DCCH.
  - 2> otherwise:
    - 3> transmit a URA UPDATE CONFIRM message on the downlink CCCH or DCCH.
  - 2> include the IE "URA identity" in the URA UPDATE CONFIRM message in a cell where multiple URA identifiers are broadcast; or
- 1> initiate an RRC connection release procedure (see subclause 8.1.4) by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH. In particular UTRAN should:
  - 2> if the CELL UPDATE message was sent because of an unrecoverable error in RB2, RB3 or RB4:
    - 3> initiate an RRC connection release procedure (subclause 8.1.4) by transmitting an RRC CONNECTION RELEASE message on the downlink CCCH.

UTRAN may transmit several CELL UPDATE CONFIRM/URA UPDATE CONFIRM messages to increase the probability of proper reception of the message by the UE. In such a case, the RRC SN for these repeated messages should be the same.

# 8.3.1.6 Reception of the CELL UPDATE CONFIRM/URA UPDATE CONFIRM message by the UE

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U\_RNTI; or
- if the message is received on DCCH:

#### the UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

#### the UE shall:

- 1> stop timer T302;
- 1> set variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED to FALSE;
- 1> in case of a cell update procedure and the CELL UPDATE CONFIRM message:
  - 2> includes "RB information elements"; and/or
  - 2> includes "Transport channel information elements"; and/or
  - 2> includes "Physical channel information elements"; and
  - 2> if the variable ORDERED RECONFIGURATION is set to FALSE:
    - 3> set the variable ORDERED\_RECONFIGURATION to TRUE.
- 1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:
  - 2> if the IE "Frequency info" is included in the message:
    - 3> if the IE "RRC State Indicator" is set to the value "CELL\_FACH":
      - 4> select a suitable UTRA cell according to [4] on that frequency;
      - 4> if the UE finds a suitable UTRA cell on that frequency:
        - 5> if the received CELL UPDATE CONFIRM message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received CELL UPDATE CONFIRM message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
          - 6> act as specified in subclause 8.3.1.12.
      - 4> else, if the UE can not find a suitable UTRA cell on the indicated frequency but it finds a suitable UTRA cell on another frequency:
        - 5> act as specified in subclause 8.3.1.12.
    - 3> if the IE "RRC State Indicator" is set to the value "CELL\_PCH" or "URA\_PCH":
      - 4> select a suitable UTRA cell according to [4] on that frequency;
      - 4> if the UE finds a suitable UTRA cell on that frequency:
        - 5> if the received CELL UPDATE CONFIRM message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE in CELL\_PCH state selects another cell than indicated by this IE or the received CELL UPDATE CONFIRM message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or

- 5> if the received CELL UPDATE CONFIRM message included the IE "URA identity", and the UE in URA\_PCH state selects cell being part of another URA than indicated by this IE or the received CELL UPDATE CONFIRM message did not include the IE "URA identity":
  - 6> act as specified in subclause 8.3.1.12.
- 4> else, if the UE can not find a suitable UTRA cell on the indicated frequency but it finds a suitable UTRA cell on another frequency:
  - 5> act as specified in subclause 8.3.1.12.
- 3> if the IE "RRC State Indicator" is set to the value "CELL DCH":
  - 4> act on the IE "Frequency info" as specified in subclause 8.6.6.1.
- 2> if the IE "RRC State Indicator" is set to the value "CELL\_PCH" or "URA\_PCH":
  - 3> if the IE "Wait time" <> 0 is included in the message and the UE supports timer T320:
    - 4> start timer T320 with value set to the time stated in the IE "wait time".
- 2> use the transport channel(s) applicable for the physical channel types that is used; and
- 2> if the IE "TFS" is neither included nor previously stored in the UE for that transport channel(s):
  - 3> use the TFS given in system information.
- 2> if none of the TFS stored is compatible with the physical channel:
  - 3> delete the stored TFS;
  - 3> use the TFS given in system information.
- 2> if the IE "RLC re-establish indicator (RB2, RB3 and RB4)" in the CELL UPDATE CONFIRM message is set to TRUE:
  - 3> re-establish the RLC entities for signalling radio bearer RB2, signalling radio bearer RB3 and signalling radio bearer RB4 (if established);
  - 3> if the value of the IE "Status" in the variable CIPHERING\_STATUS of the CN domain stored in the variable LATEST\_CONFIGURED\_CN\_DOMAIN is set to "Started":
    - 4> set the HFN component of the respective COUNT-C values for AM RLC entities with RB identity 2,RB identity 3 and RB identity 4 (if established) equal to the START value included in the latest transmitted CELL UPDATE message for the CN domain stored in the variable LATEST\_CONFIGURED\_CN\_DOMAIN.
- NOTE: UTRAN should not send a CELL UPDATE CONFIRM message with a target state CELL\_PCH or URA\_PCH, and including C-RNTI, and setting the IE "RLC re-establish indicator (RB2, RB3 and RB4)" to TRUE, otherwise the UE behaviour is not specified.
  - 2> if the IE "RLC re-establish indicator (RB5 and upwards)" in the CELL UPDATE CONFIRM message is set to TRUE:
    - 3> for radio bearers with RB identity 5 and upwards:
      - 4> re-establish the AM RLC entities;
      - 4> if the value of the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
        - 5> set the HFN component of the respective COUNT-C values for AM RLC entities equal to the START value included in this CELL UPDATE message for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS.

- NOTE: UE actions, in case IE "Downlink counter synchronisation info" is included and either IE "RLC reestablish indicator (RB2, RB3 and RB4)" or IE "RLC re-establish indicator (RB5 and upwards)" are set to TRUE, are not defined.
- 1> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
  - 2> set the IE "Status" in the variable SECURITY\_MODIFICATION for all the CN domains in the variable SECURITY\_MODIFICATION to "Affected".
- 1> if the variable ESTABLISHMENT\_CAUSE is set:
  - 2> clear the variable ESTABLISHMENT CAUSE.
- 1> enter a state according to subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

If the UE after state transition enters CELL\_DCH state, it shall:

- 1> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);
- 1> not prohibit periodical status transmission in RLC.
- 1> if the IE "Default DPCH Offset Value" is not included:
  - 2> the UE behaviour is not specified.

If the UE after state transition remains in CELL\_FACH state, it shall

- 1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";
- 1> select PRACH according to subclause 8.5.17;
- 1> for TDD; or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_FACH state; or
- 1> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 2> select Secondary CCPCH according to subclause 8.5.19;
  - 2> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.
- 1> else:
  - 2> if the RBs have the multiplexing option with transport channel type "HS-DSCH" for the DL and transport channel type "RACH" in the UL; and
  - 2> if variable H\_RNTI and variable C\_RNTI are set:
    - 3> start to receive HS-DSCH according to the procedure in subclause 8.5.36.
  - 2> else:
    - 3> clear variable C\_RNTI and delete any stored C-RNTI value;
    - 3> clear variable H\_RNTI and delete any stored H-RNTI value;
    - 3> clear any stored IEs "HARQ info";
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> not prohibit periodical status transmission in RLC;

- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
  - 2> ignore that IE and stop using DRX.

If the UE after state transition enters URA\_PCH or CELL\_PCH state, it shall:

- 1> prohibit periodical status transmission in RLC;
- 1> for TDD; or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state; or
- 1> if the IE "HS-DSCH paging system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 2> clear the variable C\_RNTI;
  - 2> stop using that C\_RNTI just cleared from the variable C\_RNTI in MAC.
- 1> start the timer T305 using its initial value if timer T305 is not running and periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";
- 1> for TDD; or
- 1> for FDD, if the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state; or
- 1> if the IE "HS-DSCH paging system information" is not included in System Information Block type 5 or System Information Block type 5bis:
  - 2> select Secondary CCPCH according to subclause 8.5.19;
  - 2> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.
- 1> else:
  - 2> if the UE is in CELL\_PCH:
    - 3> if IE "New C-RNTI" is not included:
      - 4> clear the variable C RNTI;
      - 4> clear the variable H\_RNTI;
      - 4> clear any stored IEs "HARQ info".
  - 2> monitor its paging occasions on the selected PICH determined according to subclauses 8.6.3.1a, 8.6.3.2 and 8.5.39 and receive PCCH on the HS-DSCH mapped on the HS-PDSCH, or DCCH and DTCH mapped on the HS-PDSCH and the associated HS-SCCH selected by the UE according to the procedures in subclause 8.5.40.
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
  - 2> use the values in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging Occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.
- NOTE: In the case of a cell update procedure during an ongoing reconfiguration procedure moving the UE into CELL\_PCH/URA\_PCH then the value of the IE "UTRAN DRX Cycle length coefficient" sent in the CELL UPDATE CONFIRM message should be the same as the value sent in the reconfiguration message.
- 1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- If the UE after the state transition remains in CELL\_FACH state; and
  - 1> the contents of the variable C RNTI are empty:

it shall check the value of V302; and:

- 1> if V302 is equal to or smaller than N302:
  - 2> if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
    - 3> the IE "Reconfiguration" in the variable CIPHERING\_STATUS is set to TRUE; and/or
    - 3> the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO is set to TRUE:
      - 4> abort the ongoing integrity and/or ciphering reconfiguration;
      - 4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
        - 5> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE; and
        - 5> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO.
      - 4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
        - 5> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to FALSE; and
        - 5> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.
  - 2> in case of a URA update procedure:
    - 3> stop the URA update procedure;
    - 3> clear any entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and
    - 3> continue with a cell update procedure.
  - 2> set the contents of the CELL UPDATE message according to subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "cell reselection";
  - 2> submit the CELL UPDATE message for transmission on the uplink CCCH;
  - 2> increment counter V302;
  - 2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.
- 1> if V302 is greater than N302:
  - 2> clear the variable RB UPLINK CIPHERING ACTIVATION TIME INFO;
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
  - 2> in case of a cell update procedure:
    - 3> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
  - 2> in case of a URA update procedure:
    - 3> clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
  - 2> release all its radio resources:
  - 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;

- 2> clear the variable ESTABLISHED\_RABS;
- 2> enter idle mode;
- 2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- 2> and the procedure ends.

If the UE after the state transition remains in CELL\_FACH state; and

- a C-RNTI is stored in the variable C\_RNTI;

or

- the UE after the state transition moves to another state than the CELL\_FACH state:

#### the UE shall:

- 1> in case cell reselection interrupted an ongoing cell update procedure and a CELL UPDATE CONFIRM/URA UPDATE CONFIRM was received with the IE "Downlink counter synchronisation info" present and the response to which was not submitted to the lower layers due to the cell re-selection:
  - 2> include the IE "START list" in the response message transmitted according to subclause 8.3.1.7;
  - 2> if the CELL UPDATE CONFIRM/URA UPDATE CONFIRM, the response to which was not delivered to the lower layers, due to the cell re-selection, included the IE "RB with PDCP information list":
    - 3> include the IE "RB with PDCP information list" in the response message transmitted according to subclause 8.3.1.7.
- 1> in case of a cell update procedure:
  - 2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry.
- 1> in case of a URA update procedure:
  - 2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
- 1> if the variable PDCP\_SN\_INFO is non-empty:
  - 2> include the IE "RB with PDCP information list" in any response message transmitted below and set it to the value of the variable PDCP\_SN\_INFO.
- 1> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message included the IE "Downlink counter synchronisation info":
  - 2> if the variable PDCP\_SN\_INFO is empty:
    - 3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".
  - 2> else:
    - 3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";
    - 3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".

- 2> re-establish the RLC entity for RB2;
- 2> for the downlink and the uplink, apply the ciphering configuration as follows:
  - 3> if the received re-configuation message included the IE "Ciphering Mode Info":
    - 4> use the ciphering configuration in the received message when transmitting the response message.
  - 3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:
    - 4> if the previous SECURITY MODE COMMAND was received due to new keys being received:
      - 5> consider the new ciphering configuration to include the received new keys;
      - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.
    - 4> else if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST\_CONFIGURED\_CN\_DOMAIN:
      - 5> consider the new ciphering configuration to include the keys associated with the LATEST\_CONFIGURED\_CN\_DOMAIN;
      - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST\_CONFIGURED\_CN\_DOMAIN at the reception of the previous SECURITY MODE COMMAND.
    - 4> apply the new ciphering configuration immediately following RLC re-establishment.
  - 3> else:
    - 4> continue using the current ciphering configuration.
- 2> set the new uplink and downlink HFN component of the COUNT-C of RB2 to MAX(uplink HFN component of the COUNT-C of RB2, downlink HFN component of the COUNT-C of RB2);
- 2> increment by one the downlink and uplink values of the HFN component of the COUNT-C for RB2;
- 2> calculate the START value according to subclause 8.5.9;
- 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in any response message transmitted below.
- 1> if System Information Block type 11 is scheduled on the BCCH and the UE has not read nor stored the IEs present in this System Information Block; or
- 1> if System Information Block type 11bis is scheduled on the BCCH and the UE has not read nor stored the IEs present in this System Information Block; or
- 1> if System Information Block type 12 is scheduled on the BCCH and the UE has not read nor stored the IEs present in this System Information Block:
  - 2> include the IE "Deferred measurement control reading" in any response message transmitted.
- 1> transmit a response message as specified in subclause 8.3.1.7;
- 1> if the IE "Integrity protection mode info" was present in the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
  - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.

- 1> if the variable ORDERED\_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
  - 2> set the variable ORDERED\_RECONFIGURATION to FALSE.
- 1> clear the variable PDCP\_SN\_INFO;
- 1> when the response message transmitted per subclause 8.3.1.7 to the UTRAN has been confirmed by RLC:
  - 2> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
    - 3> resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;
    - 3> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE; and
    - 3> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO.
  - 2> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
    - 3> set "Uplink RRC Message sequence number" for signalling radio bearer RB0 in the variable INTEGRITY\_PROTECTION\_INFO to a value such that next RRC message to be sent on uplink RB0 will use the new integrity protection configuration;
    - 3> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;
    - 3> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to FALSE.
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.
- 1> in case of a cell update procedure:
  - 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
- 1> in case of a URA update procedure:
  - 2> clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
- 1> set the variable CELL\_UPDATE\_STARTED to FALSE;
- 1> if the variable AM\_RLC\_ERROR\_PENDING\_RB234 is set to TRUE:
  - 2> set the variable AM\_RLC\_ERROR\_PENDING\_RB234 to FALSE.
- 1> if the variable AM\_RLC\_ERROR\_PENDING\_RB5\_AND\_UP is set to TRUE:
  - 2> set the variable AM\_RLC\_ERROR\_PENDING\_RB5\_AND\_UP to FALSE.
- 1> clear the variable SECURITY\_MODIFICATION.
- 1> stop timers T314 and/or T315 if they are running.

The procedure ends.

## 8.3.1.7 Transmission of a response message to UTRAN

If the CELL UPDATE CONFIRM message:

- includes the IE "RB information to release list":

the UE shall:

1> transmit a RADIO BEARER RELEASE COMPLETE as response message using AM RLC.

## If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list"; and
- includes the IE "RB information to reconfigure list"; or
- includes the IE "RB information to be affected list":

#### the UE shall:

1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message using AM RLC.

#### If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list", nor the IE "RB information to reconfigure list", nor the IE "RB information to be affected list"; and
- includes "Transport channel information elements":

#### the UE shall:

1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

#### If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list", nor the IE "RB information to reconfigure list", nor the IE "RB information to be affected list"; and
- does not include "Transport channel information elements"; and
- includes "Physical channel information elements":

#### the UE shall:

1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

## If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list", nor the IE "RB information to reconfigure list", nor the IE "RB information to be affected list"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI"; or
- includes the IE "Downlink counter synchronisation info" and the IE "New U-RNTI":

NOTE: In the case of a cell update procedure during an ongoing reconfiguration procedure moving the UE into CELL\_PCH/URA\_PCH the CELL UPDATE CONFIRM message should include the IE "New C-RNTI".

#### the UE shall:

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

## If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and

- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New C-RNTI"; and
- does not include the IE "New U-RNTI":

#### the UE shall:

1> transmit no response message.

#### If the URA UPDATE CONFIRM message:

- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes any one or both of the IEs "New C-RNTI" and "New U-RNTI"; or
- includes the IE "Downlink counter synchronisation info" and the IE "New U-RNTI":

#### the UE shall:

1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

#### If the URA UPDATE CONFIRM message:

- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New U-RNTI"; and
- does not include the IE "New C-RNTI":

### the UE shall:

1> transmit no response message.

If the new state is CELL DCH state, the UE shall, after the state transition:

- 1> if the IE "Deferred measurement control reading" was included in the response message:
  - 2> clear the variable CELL\_INFO\_LIST.

If the new state is CELL\_DCH or CELL\_FACH, the response message shall be transmitted using the new configuration after the state transition., and the UE shall:

- 1> if the IE "Downlink counter synchronisation info" was included in the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
  - 2> when RLC has confirmed the successful transmission of the response message:
    - 3> if the variable PDCP\_SN\_INFO is empty:
      - 4> configure the RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "continue".

- 3> else:
  - 4> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "continue";
  - 4> configure the RLC entity for UM and AM radio bearers for which the IE " PDCP SN Info" is not included to "continue".
- 3> re-establish all AM and UM RLC entities with RB identities larger than 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the corresponding CN domain;
- 3> re-establish the RLC entities with RB identities 1, 3 and 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the CN domain stored in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
- 3> set the remaining bits of the HFN component of the COUNT-C values of all UM RLC entities to zero;
- 3> if the IE "PDCP context relocation info" is not present:
  - > re-initialise the PDCP header compression entities of each radio bearer in the variable ESTABLISHED\_RABS as specified in [36].
- 3> if the IE "PDCP context relocation info" is present:
  - 4> perform the actions as specified in subclause 8.6.4.13.
- 1> if the variable PDCP\_SN\_INFO is empty:
  - 2> if the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
    - 3> when RLC has confirmed the successful transmission of the response message:
      - 4> continue with the remainder of the procedure.
  - 2> if the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message did not contain the IE "Ciphering mode info":
    - 3> when RLC has been requested to transmit the response message,
      - 4> continue with the remainder of the procedure.
- 1> if the variable PDCP\_SN\_INFO is non-empty:
  - 2> when RLC has confirmed the successful transmission of the response message:
    - 3> for each radio bearer in the variable PDCP\_SN\_INFO:
      - 4> if the IE "RB started" in the variable ESTABLISHED\_RABS is set to "started":
        - 5> configure the RLC entity for that radio bearer to "continue".
    - 3> continue with the remainder of the procedure.

If the new state is CELL\_PCH or URA\_PCH, the response message shall be transmitted in CELL\_FACH state, and the UE shall:

- 1> when RLC has confirmed the successful transmission of the response message:
  - 2> if the IE "Downlink counter synchronisation info" was included in the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
    - 3> re-establish all AM and UM RLC entities with RB identities larger than 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the corresponding CN domain;

- 3> re-establish the RLC entities with RB identities 1, 3 and 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the CN domain stored in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
- 3> set the remaining bits of the HFN component of the COUNT-C values of all UM RLC entities to zero;
- 3> re-initialise the PDCP header compression entities of each radio bearer in the variable ESTABLISHED\_RABS as specified in [36].
- 2> for each radio bearer in the variable PDCP\_SN\_INFO:
  - 3> if the IE "RB started" in the variable ESTABLISHED RABS is set to "started":
    - 4> configure the RLC entity for that radio bearer to "continue".
- 2> enter the new state (CELL\_PCH or URA\_PCH, respectively).
- 1> continue with the remainder of the procedure.

# 8.3.1.7a Physical channel failure

If the received CELL UPDATE CONFIRM message would cause the UE to transit to CELL\_DCH state:

- 1> if the UE failed to establish the physical channel(s) indicated in the received CELL UPDATE CONFIRM message according to the criteria defined in subclause 8.5.4 are not fulfilled;
- 1> if the received CELL UPDATE CONFIRM message does not contain dedicated physical channels; or
- 1> for 3.84 Mcps TDD or 7.68 Mcps TDD, if the received CELL UPDATE CONFIRM does not contain physical channels to which DCCH(s) are mapped:

#### the UE shall:

- 1> if, caused by the received CELL UPDATE CONFIRM message
  - 2> the IE "Reconfiguration" in the variable CIPHERING\_STATUS is set to TRUE; and/or
  - 2> the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO is set to TRUE:
    - 3> abort the ongoing integrity and/or ciphering reconfiguration;
    - 3> if the received CELL UPDATE CONFIRM message contained the IE "Ciphering mode info":
      - 4> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE; and
      - 4> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO.
    - 3> if the received CELL UPDATE CONFIRM message contained the IE "Integrity protection mode info":
      - 4> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to FALSE; and
      - 4> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.
- 1> if the variable ORDERED\_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message:
  - 2> set the IE "failure cause" to "physical channel failure";
  - 2> set the variable ORDERED\_RECONFIGURATION to FALSE.
- 1> if V302 is equal to or smaller than N302:
  - 2> select a suitable UTRA cell according to [4];
  - 2> set the contents of the CELL UPDATE message according to subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "Radio link failure";

- 2> submit the CELL UPDATE message for transmission on the uplink CCCH;
- 2> increment counter V302;
- 2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.
- 1> if V302 is greater than N302:
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
  - 2> in case of a cell update procedure:
    - 3> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
  - 2> release all its radio resources;
  - 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
  - 2> clear the variable ESTABLISHED\_RABS;
  - 2> set the variable CELL\_UPDATE\_STARTED to FALSE;
  - 2> enter idle mode.

## 8.3.1.8 Unsupported configuration by the UE

If the UE does not support the configuration in the CELL UPDATE CONFIRM message and/or the variable UNSUPPORTED\_CONFIGURATION is set to TRUE, the UE shall:

- 1> if V302 is equal to or smaller than N302, the UE shall:
  - 2> if, caused by the received CELL UPDATE CONFIRM message
    - 3> the IE "Reconfiguration" in the variable CIPHERING\_STATUS is set to TRUE; and/or
    - 3> the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO is set to TRUE:
      - 4> abort the ongoing integrity and/or ciphering reconfiguration;
      - 4> if the received CELL UPDATE CONFIRM message contained the IE "Ciphering mode info":
        - 5> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE; and
        - 5> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO.
      - 4> if the received CELL UPDATE CONFIRM message contained the IE "Integrity protection mode info":
        - 5> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to FALSE; and
        - $5{\gt{clear}}\ the\ variable\ INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.$
  - 2> if the variable ORDERED\_RECONFIGURATION is set to TRUE due to the received CELL UPDATE CONFIRM message in case of a cell update procedure:
    - 3> set the variable ORDERED\_RECONFIGURATION to FALSE.
  - 2> set the variable FAILURE\_INDICATOR to TRUE;
  - 2> set the variable FAILURE\_CAUSE to "Unsupported configuration";

- 2> set the content of the CELL UPDATE message according to subclause 8.3.1.3;
- 2> submit the CELL UPDATE message for transmission on the uplink CCCH;
- 2> increment counter V302:
- 2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.
- 1> if V302 is greater than N302, the UE shall:
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
  - 2> clear the variable PDCP\_SN\_INFO;
  - 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
  - 2> release all its radio resources;
  - 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
  - 2> clear the variable ESTABLISHED\_RABS;
  - 2> set the variable CELL\_UPDATE\_STARTED to FALSE;
  - 2> enter idle mode;
  - 2> Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
  - 2> and the procedure ends.

# 8.3.1.9 Invalid configuration

If the variable INVALID\_CONFIGURATION is set to TRUE, the UE shall:

- 1> if V302 is equal to or smaller than N302:
  - 2> if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message
    - 3> the IE "Reconfiguration" in the variable CIPHERING\_STATUS is set to TRUE; and/or
    - 3> the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO is set to TRUE:
      - 4> abort the ongoing integrity and/or ciphering reconfiguration;
      - 4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
        - 5> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE; and
        - $5{>}\ clear\ the\ variable\ RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO.$
      - 4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info";
        - 5> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to FALSE; and
        - 5> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.

- 2> if the variable ORDERED\_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
  - 3> set the variable ORDERED\_RECONFIGURATION to FALSE.
- 2> in case of a cell update procedure:
  - 3> set the variable FAILURE\_INDICATOR to TRUE;
  - 3> set the variable FAILURE\_CAUSE to "Invalid configuration";
  - 3> set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
  - 3> submit the CELL UPDATE message for transmission on the uplink CCCH.
- 2> in case of a URA update procedure:
  - 3> set the contents of the URA UPDATE message according to subclause 8.3.1.3;
  - 3> submit the URA UPDATE message for transmission on the uplink CCCH.
- 2> increment counter V302;
- 2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.
- 1> if V302 is greater than N302:
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
  - 2> clear the variable PDCP\_SN\_INFO;
  - 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
  - 2> release all its radio resources;
  - 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
  - 2> clear the variable ESTABLISHED\_RABS;
  - 2> set the variable CELL UPDATE STARTED to FALSE;
  - 2> enter idle mode;
  - 2> Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
  - 2> the procedure ends.

## 8.3.1.9a Incompatible simultaneous reconfiguration

In case of a cell update procedure and if the received CELL UPDATE CONFIRM message

- includes the IE "RB information to release list", and/or the IE "RB information to reconfigure list", and/or the IE "RB information to be affected list", and/or
- includes "Transport channel information elements"; and/or
- includes "Physical channel information elements"; and

- the variable ORDERED\_RECONFIGURATION is set to TRUE because of an ongoing Reconfiguration procedure;

or

If the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION is set to TRUE due to the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:

#### the UE shall:

- 1> if V302 is equal to or smaller than N302:
  - 2> if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message
    - 3> the IE "Reconfiguration" in the variable CIPHERING\_STATUS is set to TRUE; and/or
    - 3> the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO is set to TRUE:
      - 4> abort the ongoing integrity and/or ciphering reconfiguration;
      - 4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
        - 5> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE; and
        - 5> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO.
      - 4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
        - 5> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to FALSE; and
        - 5> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.
  - 2> if the variable ORDERED\_RECONFIGURATION is set to TRUE due to the received CELL UPDATE CONFIRM message in case of a cell update procedure:
    - 3> set the variable ORDERED\_RECONFIGURATION to FALSE.
  - 2> set the variable FAILURE INDICATOR to TRUE;
  - 2> set the variable FAILURE\_CAUSE to "Incompatible simultaneous reconfiguration";
  - 2> set the content of the CELL UPDATE message according to subclause 8.3.1.3;
  - 2> submit the CELL UPDATE message for transmission on the uplink CCCH;
  - 2> increment counter V302;
  - 2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.
- 1> if V302 is greater than N302:
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
  - 2> clear the variable PDCP\_SN\_INFO;
  - 2> set the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION to FALSE;
  - 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
  - 2> release all its radio resources;

- 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
- 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 2> clear the variable ESTABLISHED\_RABS;
- 2> set the variable CELL\_UPDATE\_STARTED to FALSE;
- 2> enter idle mode;
- 2> Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- 2> the procedure ends.

## 8.3.1.9b Security reconfiguration during Cell update procedure

If:

- the variable CELL\_UPDATE\_STARTED is set to TRUE; and
- the UE receives a SECURITY MODE COMMAND message:

the UE shall

1> ignore the received SECURITY MODE COMMAND and continue with any ongoing processes and procedures as if the SECURITY MODE COMMAND message has not been received.

#### 8.3.1.10 Confirmation error of URA ID list

If the URA UPDATE CONFIRM message causes a confirmation error of URA identity list as specified in subclause 8.6.2.1 the UE shall:

- 1> check the value of V302; and
- 1> if V302 is smaller or equal than N302:
  - 2> if, caused by the received URA UPDATE CONFIRM message
    - 3> the IE "Reconfiguration" in the variable CIPHERING\_STATUS is set to TRUE; and/or
    - 3> the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO is set to TRUE:
      - 4> abort the ongoing integrity and/or ciphering reconfiguration;
      - 4> if the received URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
        - 5> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to FALSE; and
        - 5> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO.
      - 4> if the received URA UPDATE CONFIRM message contained the IE "Integrity protection mode info"
        - 5> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to FALSE; and
        - 5> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.
  - 2> set the IEs in the URA UPDATE message according to subclause 8.3.1.3;
  - 2> submit the URA UPDATE message for transmission on the uplink CCCH;
  - 2> increment counter V302;
  - 2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

- 1> if V302 is greater than N302:
  - 2> release all its radio resources;
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
  - 2> clear the variable PDCP\_SN\_INFO;
  - 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
  - 2> clear the variable ESTABLISHED\_RABS;
  - 2> set the variable CELL\_UPDATE\_STARTED to FALSE;
  - 2> enter idle mode;
  - 2> perform the actions specified in subclause 8.5.2 when entering idle mode from connected mode;
  - 2> the procedure ends.

# 8.3.1.11 Invalid CELL UPDATE CONFIRM/URA UPDATE CONFIRM message

If the UE receives an CELL UPDATE CONFIRM/URA UPDATE CONFIRM message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows:

- 1> If V302 is equal to or smaller than N302, the UE shall:
  - 2> set the variable PROTOCOL\_ERROR\_INDICATOR to TRUE;
  - 2> in case of a cell update procedure:
    - 3> set the contents of the CELL UPDATE message according to subclause 8.3.1.3;
    - 3> submit the CELL UPDATE message for transmission on the uplink CCCH.
  - 2> in case of a URA update procedure:
    - 3> set the contents of the URA UPDATE message according to subclause 8.3.1.3;
    - 3> submit the URA UPDATE message for transmission on the uplink CCCH.
  - 2> increment counter V302;
  - 2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.
- 1> if V302 is greater than N302, the UE shall:
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> in case of a cell update procedure:
    - 3> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
  - 2> in case of a URA update procedure:
    - 3> clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.

- 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
- 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 2> clear the variable ESTABLISHED\_RABS;
- 2> set the variable CELL\_UPDATE\_STARTED to FALSE;
- 2> release all its radio resources;
- 2> enter idle mode;
- 2> Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- 2> the procedure ends.

# 8.3.1.12 T302 expiry or cell reselection

If any or several of the following conditions are true:

- expiry of timer T302;
- reselection to another UTRA cell (including the previously serving cell) before completion of the cell update or URA update procedure;

#### the UE shall:

- 1> stop T302 if it is running;
- 1> if the UE was in CELL\_DCH state prior to the initiation of the procedure; and
  - 2> if timers T314 and T315 have elapsed while T302 was running:
    - 3> enter idle mode.
    - 3> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers. Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2.
    - 3> and the procedure ends.
  - 2> if timer T314 has elapsed while T302 was running and,
    - 3> if "T314 expired" in the variable RB\_TIMER\_INDICATOR is set to FALSE and
    - 3> if T315 is still running:
      - 4> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT314";
      - 4> indicate release of those radio access bearers to upper layers;
      - 4> delete all information about those radio access bearers from the variable ESTABLISHED\_RABS;
      - 4> set "T314 expired" in the variable RB\_TIMER\_INDICATOR to TRUE;
      - 4> if all radio access bearers associated with a CN domain are released:
        - 5> release the signalling connection for that CN domain;
        - 5> remove the signalling connection for that CN domain from the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;

- 5> indicate release (abort) of the signalling connection to upper layers.
- 2> if timer T315 has elapsed while T302 was running and,
  - 3> if "T315 expired" in the variable RB\_TIMER\_INDICATOR is set to FALSE and,
  - 3> if T314 is still running:
    - 4> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "useT315";
    - 4> indicate release of those radio access bearers to upper layers;
    - 4> delete all information about those radio access bearers from the variable ESTABLISHED\_RABS;
    - 4> set "T315 expired" in the variable RB\_TIMER\_INDICATOR to TRUE;
    - 4> if all radio access bearers associated with a CN domain are released:
      - 5> release the signalling connection for that CN domain;
      - 5> remove the signalling connection for that CN domain from the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
      - 5> indicate release (abort) of the signalling connection to upper layers.
- 2> if timers T314 and T315 are not running:
  - 3> enter idle mode;
  - 3> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers. Other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
  - 3> and the procedure ends.
- 1> check whether it is still in "in service area" (see subclause 8.5.5.2);
- 1> if the variable ORDERED\_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
  - 2> set the variable ORDERED\_RECONFIGURATION to FALSE.
- 1> in case of a cell update procedure:
  - 2> clear any entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS.
- 1> in case of a URA update procedure:
  - 2> clear any entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS.

If the UE detects "in service area" if it has not entered idle mode, and:

- 1> if V302 is equal to or smaller than N302, the UE shall:
  - 2> if the UE performed cell re-selection:
    - 3> delete its C-RNTI;
    - 3> for FDD, if the variable H-RNTI is set:
      - 4> clear the variable H\_RNTI;
      - 4> stop using that H\_RNTI just cleared from the variable H\_RNTI in MAC;

- 4> clear any stored IEs "HARQ info".
- 3> for FDD, if the UE does support HS-DSCH reception in CELL\_FACH state and the IE "HS-DSCH common system information" is included in System Information Block type 5 or System Information Block type 5bis:
  - 4> reset the MAC-ehs entity [15];
  - 4> set variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED to TRUE;
  - 4> and start receiving the HS-DSCH according to the procedure in subclause 8.5.37.
- 3> else:
  - 4> take the actions related to the HS\_DSCH\_RECEPTION\_GENERAL variable as described in subclause 8.5.37a.
- 2> in case of a cell update procedure:
  - 3> set the contents of the CELL UPDATE message according to subclauses 8.3.1.3 and 8.5.10;
  - 3> if a CELL UPDATE CONFIRM message was received and caused the IE "Reconfiguration" in the variable CIPHERING\_STATUS to be set to TRUE and/or the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to be set to TRUE:
    - 4> if the IE "Downlink counter synchronisation info" was included in the received CELL UPDATE CONFIRM message:
      - 5> apply the new security (integrity protection) configuration received in the CELL UPDATE CONFIRM on the CELL UPDATE message.
  - 3> submit the CELL UPDATE message for transmission on the uplink CCCH.
- 2> in case of a URA update procedure:
  - 3> set the contents of the URA UPDATE message according to subclauses 8.3.1.3 and 8.5.10;
  - 3> if a URA UPDATE CONFIRM message was received and caused the IE "Reconfiguration" in the variable CIPHERING\_STATUS to be set to TRUE and/or the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO is set to TRUE:
    - 4> if the IE "Downlink counter synchronisation info" was included in the received URA UPDATE CONFIRM message:
      - 5> apply the new security (integrity protection) configuration received in the URA UPDATE CONFIRM on the URA UPDATE message.
  - 3> submit the URA UPDATE message for transmission on the uplink CCCH.
- 2> increment counter V302;
- 2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.
- 1> if V302 is greater than N302, the UE shall:
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable INTEGRITY PROTECTION ACTIVATION INFO;
  - 2> clear the variable PDCP\_SN\_INFO;
  - 2> in case of a cell update procedure:
    - 3> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
  - 2> in case of a URA update procedure:

- 3> clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
- 2> release all its radio resources;
- 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
- 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 2> clear the variable ESTABLISHED\_RABS;
- 2> set the variable CELL\_UPDATE\_STARTED to FALSE;
- 2> enter idle mode;
- 2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- 2> and the procedure ends.

If the UE detects "out of service area", it shall:

1> act according to subclause 7.2.2.

## 8.3.1.13 T314 expiry

Upon expiry of timer T314 the UE shall:

- 1> if timer T302 is running:
  - 2> continue awaiting response message from UTRAN.
- 1> if timer T302 is not running and timer T315 is running:
  - 2> set IE "T314 expired" in variable RB\_TIMER\_INDICATOR to TRUE;
  - 2> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED RABS the value of the IE "Re-establishment timer" is set to "useT314";
  - 2> indicate release of those radio access bearers to upper layers;
  - 2> delete all information about those radio access bearers from the variable ESTABLISHED\_RABS;
  - 2> if all radio access bearers associated with a CN domain are released:
    - 3> release the signalling connection for that CN domain;
    - 3> remove the signalling connection for that CN domain from the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
    - 3> indicate release (abort) of the signalling connection to upper layers.
- 1> if timers T302 and T315 are not running:
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
  - 2> clear the variable PDCP SN INFO;
  - 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
  - 2> release all its radio resources;

- 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
- 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
- 2> clear the variable ESTABLISHED\_RABS;
- 2> set the variable CELL\_UPDATE\_STARTED to FALSE;
- 2> enter idle mode;
- 2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- 2> and the procedure ends.

# 8.3.1.14 T315 expiry

Upon expiry of timer T315 the UE shall:

- 1> if timer T302 is running:
  - 2> continue awaiting response message from UTRAN.
- 1> if timer T302 is not running and timer T314 is running:
  - 2> set IE "T315 expired" in variable RB\_TIMER\_INDICATOR to TRUE;
  - 2> release locally all radio bearers which are associated with any radio access bearers for which in the variable ESTABLISHED\_RABS the value of the IE "Re-establishment timer" is set to "use T315";
  - 2> indicate release of those radio access bearers to upper layers;
  - 2> delete all information about those radio access bearers from the variable ESTABLISHED RABS;
  - 2> if all radio access bearers associated with a CN domain are released:
    - 3> release the signalling connection for that CN domain;
    - 3> remove the signalling connection for that CN domain from the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
    - 3> indicate release (abort) of the signalling connection to upper layers.
- 1> if timers T302 and T314 are not running:
  - 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
  - 2> clear the variable PDCP\_SN\_INFO;
  - 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS;
  - 2> release all its radio resources;
  - 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
  - 2> clear the variable ESTABLISHED RABS;
  - 2> set the variable CELL\_UPDATE\_STARTED to FALSE;

- 2> enter idle mode;
- 2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2:
- 2> and the procedure ends.

# 8.3.1.15 Reception of the UTRAN MOBILITY INFORMATION CONFIRM message by the UTRAN

See subclause 8.3.3.4.

# 8.3.1.16 T320 Expiry

Upon expiry of timer T320, the UE shall:

- 1> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:
  - 2> perform a cell update procedure according to subclause 8.3.1 using the cause corresponding to "uplink data transmission".
- 1> else:
  - 2> if the UE should perform cell update for MBMS ptp radio bearer request as specified in subclause 8.6.9.6:
    - 3> perform a cell update procedure according to subclause 8.3.1 using the cause corresponding to "MBMS ptp RB request".

# 8.3.2 URA update

See subclause 8.3.1.

# 8.3.3 UTRAN mobility information

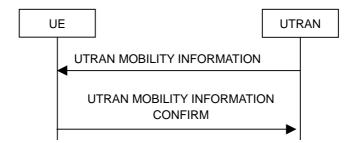


Figure 8.3.3-1: UTRAN mobility information procedure, normal flow

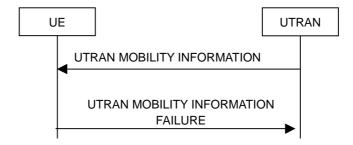


Figure 8.3.3-2: UTRAN mobility information procedure, failure case

# 8.3.3.1 General

The purpose of this procedure is to allocate any one or a combination of the following to a UE in connected mode:

- a new C-RNTI;
- a new U-RNTI;
- a new H-RNTI (FDD and CELL\_FACH state only);
- other mobility related information.

#### 8.3.3.2 Initiation

To initiate the procedure UTRAN transmits a UTRAN MOBILITY INFORMATION message to the UE on the downlink DCCH using AM or UM RLC. In case of SRNS relocation, the message is sent using UM RLC only.

## 8.3.3.3 Reception of UTRAN MOBILITY INFORMATION message by the UE

When the UE receives a UTRAN MOBILITY INFORMATION message, it shall:

- 1> act on received information elements as specified in subclause 8.6;
- 1> if the IE "UE Timers and constants in connected mode" is present:
  - 2> store the values of the IE "UE Timers and constants in connected mode" in the variable TIMERS\_AND\_CONSTANTS, replacing any previously stored value for each timer and constant; and
  - 2> for each updated timer value:
    - 3> start using the new value next time the timer is started;
- NOTE: If a new value of timer T305 is included in the IE "UE Timers and constants in connected mode", and the old value of timer T305 is "infinity", the new value may not be used immediately.
  - 2> for each updated constant value:
    - 3> start using the new value directly;
- 1> if the IE "CN domain specific DRX cycle length coefficient" is present:
  - 2> store the value of the IE "CN domain specific DRX cycle length coefficient" for that CN domain, replacing any previously stored value; and
  - 2> use the value to determine the connected mode paging occasions according to [4].
- 1> set the IE "RRC transaction identifier" in the UTRAN MOBILITY INFORMATION CONFIRM message to the value of "RRC transaction identifier" in the entry for the UTRAN MOBILITY INFORMATION message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> if the UTRAN MOBILITY INFORMATION message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
  - 2> set the IE "Status" in the variable SECURITY\_MODIFICATION for all the CN domains in the variable SECURITY\_MODIFICATION to "Affected".
- 1> if the variable PDCP\_SN\_INFO is non-empty:
  - 2> include the IE "RB with PDCP information list" in the UTRAN MOBILITY INFORMATION CONFIRM message and set it to the value of the variable PDCP\_SN\_INFO.
- 1> if the received UTRAN MOBILITY INFORMATION message included the IE "Downlink counter synchronisation info":
  - 2> if the variable PDCP\_SN\_INFO is empty:
    - 3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".

- 2> else:
  - 3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";
  - 3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".
- 2> re-establish the RLC entity for RB2;
- 2> for the downlink and the uplink, apply the ciphering configuration as follows:
  - 3> if the received re-configuation message included the IE "Ciphering Mode Info":
    - 4> use the ciphering configuration in the received message when transmitting the response message.
  - 3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:
    - 4> if the previous SECURITY MODE COMMAND was received due to new keys being received:
      - 5> consider the new ciphering configuration to include the received new keys;
      - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.
    - 4> else if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST CONFIGURED CN DOMAIN:
      - 5> consider the new ciphering configuration to include the keys associated with the LATEST\_CONFIGURED\_CN\_DOMAIN;
      - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST\_CONFIGURED\_CN\_DOMAIN at the reception of the previous SECURITY MODE COMMAND.
    - 4> apply the new ciphering configuration immediately following RLC re-establishment.
  - 3> else:
    - 4> continue using the current ciphering configuration.
- 2> set the new uplink and downlink HFN component of COUNT-C of RB2 to MAX(uplink HFN component of COUNT-C of RB2, downlink HFN component of COUNT-C of RB2);
- 2> increment by one the downlink and uplink values of the HFN component of COUNT-C for RB2;
- 2> calculate the START value according to subclause 8.5.9;
- 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the UTRAN MOBILITY INFORMATION CONFIRM message.
- 1> transmit a UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC;
- 1> if the IE "Integrity protection mode info" was present in the UTRAN MOBILITY INFORMATION message:
  - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted UTRAN MOBILITY INFORMATION CONFIRM message.
- 1> if the IE "Downlink counter synchronisation info" was included in the received UTRAN MOBILITY INFORMATION message:
  - 2> when RLC has confirmed the successful transmission of the response message:
    - 3> if the variable PDCP\_SN\_INFO is empty:

- 4> configure the RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "continue".
- 3> else:
  - 4> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "continue";
  - 4> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "continue".
- 3> re-establish all AM and UM RLC entities with RB identities larger than 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the corresponding CN domain;
- 3> re-establish the RLC entities with RB identities 1, 3 and 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the CN domain stored in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
- 3> set the remaining bits of the HFN component of the COUNT-C values of all UM RLC entities to zero;
- 3> if the IE "PDCP context relocation info" is not present:
  - 4> re-initialise the PDCP header compression entities of each radio bearer in the variable ESTABLISHED\_RABS as specified in [36].
- 3> if the IE "PDCP context relocation info" is present:
  - 4> perform the actions as specified in subclause 8.6.4.13.
- 1> if the variable PDCP\_SN\_INFO is empty; and
  - 2> if the UTRAN MOBILITY INFORMATION message contained the IE "Ciphering mode info":
    - 3> when RLC has confirmed the successful transmission of the UTRAN MOBILITY INFORMATION CONFIRM message:
      - 4> perform the actions below:
  - 2> if the UTRAN MOBILITY INFORMATION message did not contain the IE "Ciphering mode info":
    - 3> when RLC has been requested to transmit the UTRAN MOBILITY INFORMATION CONFIRM message:
      - 4> perform the actions below.
- 1> if the variable PDCP\_SN\_INFO is non-empty:
  - 2> when RLC has confirmed the successful transmission of the UTRAN MOBILITY INFORMATION CONFIRM message:
    - 3> for each radio bearer in the variable PDCP\_SN\_INFO:
      - 4> if the IE "RB started" in the variable ESTABLISHED\_RABS is set to "started":
        - 5> configure the RLC entity for that radio bearer to "continue".
    - 3> clear the variable PDCP SN INFO; and
    - 3> perform the actions below.

#### The UE shall:

- 1> if the UTRAN MOBILITY INFORMATION message contained the IE "Ciphering mode info":
  - 2> resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;
  - 2> set the IE "Reconfiguration" in the variable CIPHERING STATUS to FALSE; and

- 2> clear the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO.
- 1> if the UTRAN MOBILITY INFORMATION message contained the IE "Integrity protection mode info":
  - 2> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;
  - 2> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to FALSE; and
  - 2> clear the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.
- 1> clear the variable SECURITY\_MODIFICATION.

The procedure ends.

# 8.3.3.4 Reception of an UTRAN MOBILITY INFORMATION CONFIRM message by the UTRAN

When the network receives UTRAN MOBILITY INFORMATION CONFIRM message, UTRAN may delete any old U-RNTI. The procedure ends.

## 8.3.3.5 Cell re-selection

If the UE performs cell re-selection, the UE shall:

- 1> initiate a cell update procedure according to subclause 8.3.1;
- 1> if the UTRAN MOBILITY INFORMATION message contains the IE "New C-RNTI"; and
- 1> if the UE has not yet submitted the UTRAN MOBILITY INFORMATION CONFIRM message to lower layers for transmission; and
- 1> if the IE "Downlink counter synchronisation info" was not included in the received UTRAN MOBILITY INFORMATION message:
  - 2> transmit a UTRAN MOBILITY INFORMATION FAILURE message on the uplink DCCH using AM RLC;
  - 2> set the IE "RRC transaction identifier" in the UTRAN MOBILITY INFORMATION FAILURE message to the value of "RRC transaction identifier" in the entry for the UTRAN MOBILITY INFORMATION message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry.
  - 2> set the IE "failure cause" to the cause value "cell update occurred";
  - 2> when the UTRAN MOBILITY INFORMATION FAILURE message has been submitted to lower layers for transmission:
    - 3> continue with any ongoing processes and procedures as if the invalid UTRAN MOBILITY INFORMATION message has not been received and the procedure ends.

## 1> otherwise:

- 2> if a UTRAN MOBILITY INFORMATION message was received and caused the IE "Reconfiguration" in the variable CIPHERING\_STATUS to be set to TRUE and/or the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to be set to TRUE; and
- 2> if the IE "Downlink counter synchronisation info" was included in the received UTRAN MOBILITY INFORMATION message:
  - 3> apply the new security (integrity protection) configuration received in the UTRAN MOBILITY INFORMATION message on the CELL UPDATE message to be transmitted.
- 2> continue the procedure normally.

# 8.3.3.5a Incompatible simultaneous security reconfiguration

If the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION becomes set to TRUE of the received UTRAN MOBILITY INFORMATION message, the UE shall:

- 1> transmit a UTRAN MOBILITY INFORMATION FAILURE message on the uplink DCCH using AM RLC;
- 1> set the IE "RRC transaction identifier" in the UTRAN MOBILITY INFORMATION FAILURE message to the value of "RRC transaction identifier" in the entry for the UTRAN MOBILITY INFORMATION message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> set the IE "failure cause" to the cause value "incompatible simultaneous reconfiguration";
- 1> when the UTRAN MOBILITY INFORMATION FAILURE message has been delivered to lower layers for transmission:
  - 2> set the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION to FALSE;
  - 2> continue with any ongoing processes and procedures as if the UTRAN MOBILITY INFORMATION message has not been received;
  - 2> and the procedure ends.

## 8.3.3.6 Invalid UTRAN MOBILITY INFORMATION message

If the UTRAN MOBILITY INFORMATION message contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit a UTRAN MOBILITY INFORMATION FAILURE message on the uplink DCCH using AM RLC;
- 1> set the IE "RRC transaction identifier" in the UTRAN MOBILITY INFORMATION FAILURE message to the value of "RRC transaction identifier" in the entry for the UTRAN MOBILITY INFORMATION message in the table "Rejected transactions" in the variable TRANSACTIONS, and;
- 1> clear that entry.
- 1> set the IE "failure cause" to the cause value "protocol error";
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION;
- 1> when the UTRAN MOBILITY INFORMATION FAILURE message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid UTRAN MOBILITY INFORMATION message has not been received;
  - 2> and the procedure ends.

# 8.3.4 Active set update



Figure 8.3.4-1: Active Set Update procedure, successful case

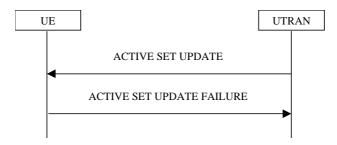


Figure 8.3.4-2: Active Set Update procedure, failure case

## 8.3.4.1 General

The purpose of the active set update procedure is to update the active set of the connection between the UE and UTRAN. This procedure shall be used in CELL\_DCH state. The UE should keep on using the old RLs while configuring the new RLs. Also the UE should keep the transmitter turned on during the procedure. This procedure is only used in FDD mode.

### 8.3.4.2 Initiation

The procedure is initiated when UTRAN orders a UE in CELL\_DCH state, to make the following modifications of the active set of the connection:

- a) Radio link addition;
- b) Radio link removal;
- c) Combined radio link addition and removal;
- d) Addition of a radio link to the E-DCH active set;
- e) Removal of a radio link from the E-DCH active set.

In case a) and c), UTRAN should:

1> prepare new additional radio link(s) in the UTRAN prior to the command to the UE.

In all cases, UTRAN should:

- 1> send an ACTIVE SET UPDATE message on downlink DCCH using AM or UM RLC;
- 1> create active sets that contain at least one common radio link across a DPCH or F-DPCH frame boundary as the result of one or multiple (parallel) active set update procedures.

UTRAN should include the following information:

- 1> IE "Radio Link Addition Information": Downlink DPCH information and other optional parameters relevant for the radio links to be added along with the IE "Primary CPICH info" used for the reference ID to indicate which radio link to add. This IE is needed in cases a) and c) listed above;
- 1> IE "Radio Link Removal Information": IE "Primary CPICH info" used for the reference ID to indicate which radio link to remove. This IE is needed in cases b) and c) listed above;
- 1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH information" to indicate which radio link to add to the E-DCH active set. This IE is needed in case d) above, when the RL added to the E-DCH active set is already in the DCH active set;
- 1> IE "E-DCH reconfiguration information": IE "Primary CPICH info" used for the reference ID along with the IE "E-HICH release indicator" to indicate which radio link to remove from the E-DCH active set. This IE is needed in case e) above, when the RL removed from the E-DCH active set remains in the DCH active set.

NOTE: The UE behaviour is unspecified if SRBs are mapped on E-DCH and the value for the E\_DCH\_TRANSMISSION variable is changed to FALSE via the Active Set Update procedure; or if SRBs are mapped on HS-DSCH and the value for the HS\_DSCH\_RECEPTION variable is changed to FALSE via the Active Set Update procedure.

# 8.3.4.3 Reception of an ACTIVE SET UPDATE message by the UE

Upon reception of an ACTIVE SET UPDATE message the UE shall act upon all received information elements as specified in 8.6, unless specified otherwise in the following.

## The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

#### The UE shall:

- 1> first add the RLs indicated in the IE "Radio Link Addition Information";
- 1> remove the RLs indicated in the IE "Radio Link Removal Information". If the UE active set is full or becomes full, an RL, which is included in the IE "Radio Link Removal Information" for removal, shall be removed before adding RL, which is included in the IE "Radio Link Addition Information" for addition;
- 1> perform the physical layer synchronisation procedure B as specified in [29];
- 1> if the IE "E-HICH information" is included:
  - 2> store this E-HICH configuration for the concerning radio link.
- 1> if the IE "E-HICH information" is included:
  - 2> store this E-RGCH configuration for the concerning radio link, if included.
- 1> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28;
- 1> if the IE "MAC-es/e reset indicator" is included in the IE "UL 16QAM configuration":
  - 2> reset the MAC-es/e entity [15].
- NOTE 1: If the IE "MAC-es/e reset indicator" is not included in the IE "UL 16QAM configuration" and 16QAM operations starts or stops, the UE behaviour is unspecified.
- 1> if the IE "UL 16QAM settings" is not included in the IE "16QAM configuration":
  - 2> indicate to lower layers to stop any operation in 16QAM mode.
- NOTE 2: If the IE "UL 16QAM configuration" is not included and 16QAM mode operation is currently ongoing, the UE behaviour is unspecified.
- 1> if the IEs "E-TFCI Boost Info" and/or "E-DPDCH power interpolation" are present, act on the received information elements;
- 1> if the IEs "E-DPCCH/DPCCH power offset" and/or "Reference E-TFCI PO" are included in the IE "E-DCH reconfiguration information same serving cell", act on the received information elements;
- NOTE 3: If E-TFCI boost is signalled to the UE and a reference E-TFCI <= E-TFCI Boost is signalled to the UE with a Reference E-TFCI PO of value 30 or 31, the UE behaviour is unspecified.
- 1> if the radio link currently considered to be the serving HS-DSCH radio link is indicated in the IE "Radio Link Removal Information":
  - 2> no longer consider any radio link as the serving HS-DSCH radio link;
  - 2> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

- 1> if "Serving HS-DSCH cell information" IE is present, act on received information elements as specified in subclause 8.6:
  - 2> if the IEs " $\Delta_{ACK}$ ", " $\Delta_{NACK}$ ", and "HARQ\_preamble\_mode" are present, act on the received information elements:
  - 2> if the new H-RNTI and "Primary CPICH info" are included:
    - 3> consider the cell indicated in Primary CPICH as serving HS-DSCH cell and no longer consider any other radio link as serving HS-DSCH cell.
  - 2> if the IE "MAC-hs reset indicator" is included:
    - 3> reset the MAC-hs/ehs entity [15].
  - 2> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.
- 1> if the IE "E-DCH reconfiguration information" is included:
  - 2> if the IE "E-DCH RL Info other cells" is present:
    - 3> if the IE "E-HICH Information" is present:
      - 4> store the E-HICH and E-RGCH information (if present), contained therein, for the indicated radio link.
    - 3> if the IE "E-HICH release indicator" is present:
      - 4> delete the stored E-HICH, E-AGCH and E-RGCH (if any) configurations.
    - 3> if the IE "E-RGCH release indicator" is set present:
      - 4> delete the stored E-RGCH configuration for this RL.
  - 2> if the IE "E-DCH RL Info new serving cell" is present:
    - 3> consider the cell indicated in "Primary CPICH info" as serving E-DCH radio link and no longer consider any other radio link as serving E-DCH radio link;
    - 3> store the E-HICH and E-RGCH information (if present), contained therein, for the new serving E-DCH radio link;
    - 3> if the IE "E-RGCH release indicator" is present:
      - 4> delete the stored E-RGCH configuration for this RL.
    - 3> store the newly received E-AGCH configuration;
    - 3> if the IE "Serving Grant" is included, and if the IE "Serving Grant Value" is not included:
      - 4> the UE behaviour is not specified.
  - 2> if the IEs "E-DPCCH/DPCCH power offset" and/or "Reference E-TFCI PO" and/or "Power offset for scheduling info" are present, act on the received information elements.
  - 2> if the serving E-DCH radio link was another radio link than this radio link prior to reception of the message:
    - 3> if the IE "New Primary E-RNTI" is not included:
      - 4> clear the Primary E-RNTI stored in the variable E\_RNTI.
    - 3> if the IE "New Secondary E-RNTI" is not included:
      - 4> clear the Secondary E-RNTI stored in the variable E\_RNTI.
- 1> if the radio link currently considered to be the serving E-DCH radio link is indicated in the IE "Radio Link Removal Information":

- 2> no longer consider any radio link as the serving E-DCH radio link.
- 1> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.
- 1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE COMPLETE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC without waiting for the completion of the Physical Layer synchronisation B, as specified in [29];
- 1> the procedure ends on the UE side.

# 8.3.4.4 Unsupported configuration in the UE

If UTRAN instructs the UE to use a configuration that it does not support, the UE shall:

- 1> keep the active set as it was before the ACTIVE SET UPDATE message was received;
- 1> transmit an ACTIVE SET UPDATE FAILURE message on the DCCH using AM RLC;
- 1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE FAILURE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> set the IE "failure cause" to "configuration unsupported";
- 1> when the ACTIVE SET UPDATE FAILURE message has been submitted to lower layers for transmission:
  - 2> the procedure ends on the UE side.

## 8.3.4.5 Invalid configuration

If any of the following conditions are valid:

- a radio link indicated by the IE "Downlink DPCH info for each RL" in the IE "Radio link addition information" has a different spreading factor than the spreading factor for the radio links in the active set that will be established at the time indicated by the IE "Activation time"; and/or
- a radio link in the IE "Radio link addition information" is also present in the IE "Radio Link Removal Information"; and/or
- the IE "Radio Link Removal Information" contains all the radio links which are part of or will be part of the active set at the time indicated by the IE "Activation time"; and/or
- the IE "TX Diversity Mode" is not set to "none" and it indicates a diversity mode that is different from the one currently used (<STTD> or <closed loop mode1>) in all or part of the active set; and/or
- a radio link indicated by the IE "Radio Link Removal Information" does not exist in the active set; and/or
- after the removal of all radio links indicated by the IE "Radio Link Removal Information" and the addition of all radio links indicated by the IE "Radio Link Addition Information" the active set would contain more than the maximum allowed number of radio links; and/or
- after the addition of all radio links indicated by the IE "Radio Link Addition Information" the active set would contain radio links indicated by the IE "Downlink DPCH info for each RL" and radio links indicated by the IE "Downlink F-DPCH info for each RL"; and/or
- the variable INVALID\_CONFIGURATION is set to TRUE:

the UE shall:

- 1> keep the active set as it was before the ACTIVE SET UPDATE message was received;
- 1> transmit an ACTIVE SET UPDATE FAILURE message on the DCCH using AM RLC;
- 1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE FAILURE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> set the IE "failure cause" to "Invalid configuration";
- 1> When the ACTIVE SET UPDATE FAILURE message has been submitted to lower layers for transmission:
  - 2> the procedure ends on the UE side.

If the following condition is valid:

- the active set update procedure results in active sets that do not contain at least one common radio link before and after a DPCH or F-DPCH frame boundary:

the UE behaviour is not specified.

### 8.3.4.5a Void

## 8.3.4.5b Incompatible simultaneous reconfiguration

If the variable ORDERED\_RECONFIGURATION is set to TRUE, the UE may:

- 1> if the activation time for the procedure that has set variable ORDERED\_RECONFIGURATION and the activation time for the Active Set Update procedure are within a time window of 5 frames:
  - 2> transmit an ACTIVE SET UPDATE FAILURE message on the uplink DCCH using AM RLC;
  - 2> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE FAILURE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "failure cause" to the cause value "incompatible simultaneous reconfiguration";
  - 2> when the ACTIVE SET UPDATE FAILURE message has been delivered to lower layers for transmission:
    - 3> continue with any ongoing processes and procedures as if the ACTIVE SET UPDATE message has not been received.
    - 3> and the procedure ends.

# 8.3.4.6 Reception of the ACTIVE SET UPDATE COMPLETE message by the UTRAN

When the UTRAN has received the ACTIVE SET UPDATE COMPLETE message,

- 1> the UTRAN may remove radio link(s) that are indicated to remove to the UE in case b) and c); and
- 1> the procedure ends on the UTRAN side.

# 8.3.4.7 Reception of the ACTIVE SET UPDATE FAILURE message by the UTRAN

When the UTRAN has received the ACTIVE SET UPDATE FAILURE message, the UTRAN may delete radio links that were included in the IE "Radio Link Addition Information" for addition. The procedure ends on the UTRAN side.

# 8.3.4.8 Invalid ACTIVE SET UPDATE message

If the ACTIVE SET UPDATE message contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit a ACTIVE SET UPDATE FAILURE message on the uplink DCCH using AM RLC;
- 1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE FAILURE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> set the IE "failure cause" to the cause value "protocol error";
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION;
- 1> when the ACTIVE SET UPDATE FAILURE message has been delivered to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid ACTIVE SET UPDATE message has not been received;
  - 2> and the procedure ends.

## 8.3.4.9 Reception of an ACTIVE SET UPDATE message in wrong state

If the UE is in another state than CELL\_DCH state upon reception of the ACTIVE SET UPDATE message, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit a ACTIVE SET UPDATE FAILURE message on the uplink DCCH using AM RLC;
- 1> set the IE "RRC transaction identifier" in the ACTIVE SET UPDATE FAILURE message to the value of "RRC transaction identifier" in the entry for the ACTIVE SET UPDATE message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> set the IE "failure cause" to the cause value "protocol error";
- 1> include the IE "Protocol error information" with the IE "Protocol error cause" set to "Message not compatible with receiver state";
- 1> when the ACTIVE SET UPDATE FAILURE message has been delivered to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the ACTIVE SET UPDATE message has not been received;
  - 2> and the procedure ends.

## 8.3.5 Hard handover

When performing hard handover with change of frequency, the UE shall:

1> stop all intra-frequency and inter-frequency measurement reporting on the cells listed in the variable CELL\_INFO\_LIST. Each stopped measurement is restarted when a MEASUREMENT CONTROL message is received with the corresponding measurement identity.

# 8.3.5.1 Timing re-initialised hard handover

### 8.3.5.1.1 General

The purpose of the timing re-initialised hard handover procedure is to remove all the RL(s) in the active set and establish new RL(s) along with a change in the CFN in the UE according to the SFN of the target cell.(see subclause 8.5.15).

For TDD timing re-initialised hard handover is realised via CFN calculation (see subclause 8.5.15.2).

NOTE: For FDD, during the hard-handover procedure, the UE will align the timing of the uplink transmission as specified in [26].

This procedure is initiated when UTRAN does not know the target SFN timing before hard handover.

# 8.3.5.1.2 Initiation (FDD only)

Timing re-initialised hard handover initiated by the UTRAN is normally performed by using the procedure "Physical channel reconfiguration" (subclause 8.2.6), but may also be performed by using either one of the following procedures:

- "radio bearer establishment" (subclause 8.2.1);
- "Radio bearer reconfiguration" (subclause 8.2.2);
- "Radio bearer release" (subclause 8.2.3); or
- "Transport channel reconfiguration" (subclause 8.2.4).

In this case of a timing re-initialised hard handover, UTRAN should include the IE "Default DPCH Offset Value" and:

- 1> in FDD mode:
  - 2> if the UE is configured for DPCH:
    - 3> set "Default DPCH Offset Value" and "DPCH frame offset" respecting the following relation

(Default DPCH Offset Value) mod 38400 = DPCH frame offset<sub>i</sub>

- where *j* indicates the first radio link listed in the message and the IE values used are the Actual Values of the IEs as defined in clause 11.
- 2> if the UE is configured for F-DPCH:
  - 3> set "Default DPCH Offset Value" and "DPCH frame offset<sub>i</sub>" respecting one of the following relations:
    - 4> (Default DPCH Offset Value) mod 38400 = DPCH frame offset; or
    - 4> (Default DPCH Offset Value+256) mod 38400 = DPCH frame offset<sub>i</sub>,
      - where *j* indicates the first radio link listed in the message and the IE values used are the Actual Values of the IEs as defined in clause 11.

If the IE "Default DPCH Offset Value" is included, the UE shall:

- 1> in FDD mode:
  - 2> if the UE is configured for DPCH:
    - 3> if (Default DPCH Offset Value) mod 38400 = DPCH frame offset<sub>j</sub>,
      - where *j* indicates the first radio link listed in the message:
      - 4> set DOFF (see subclause 8.5.15.1) to Default DPCH Offset Value.
    - 3> else:
      - 4> set the variable INVALID CONFIGURATION to TRUE.

- 2> if the UE is configured for F-DPCH:
  - 3> if (Default DPCH Offset Value) mod 38400 = DPCH frame offset<sub>i</sub>,
    - where *j* indicates the first radio link listed in the message:
    - 4> set DOFF (see subclause 8.5.15.1) to Default DPCH Offset Value.
  - 3> else if (Default DPCH Offset Value+256) mod 38400 = DPCH frame offset<sub>i</sub>,
    - where *j* indicates the first radio link listed in the message:
    - 4> set DOFF (see subclause 8.5.15.1) to Default DPCH Offset Value + 256.
  - 3> else:
    - 4> set the variable INVALID\_CONFIGURATION to true.

If the IE "Default DPCH Offset Value" is not included, the UE shall:

1> set the variable INVALID CONFIGURATION to true.

## 8.3.5.2 Timing-maintained hard handover

#### 8.3.5.2.1 General

The purpose of the Timing-maintained hard handover procedure is to remove all the RL(s) in the active set and establish new RL(s) while maintaining the CFN in the UE.

For TDD timing re-initialised hard handover is realised via CFN calculation (see subclause 8.5.15.2).

NOTE: For FDD, during the hard-handover procedure, the UE will align the timing of the uplink transmission as specified in [26].

This procedure can be initiated only if UTRAN knows the target SFN timing before hard handover. The target SFN timing can be known by UTRAN in the following 2 cases:

- UE reads SFN when measuring "Cell synchronisation information" and sends it to the UTRAN in MEASUREMENT REPORT message.
- UTRAN internally knows the time difference between the cells.

# 8.3.5.2.2 Initiation (FDD only)

Timing-maintained hard handover initiated by the network is normally performed by using the procedure "Physical channel reconfiguration" (subclause 8.2.6), but may also be performed by using either one of the following procedures:

- "radio bearer establishment" (subclause 8.2.1);
- "Radio bearer reconfiguration" (subclause 8.2.2);
- "Radio bearer release" (subclause 8.2.3); or
- "Transport channel reconfiguration" (subclause 8.2.4).

In this case of a timing maintained hard handover procedure the UTRAN should not include the IE "Default DPCH Offset Value".

If the IE "Default DPCH Offset Value" is included, the UE shall:

1> ignore the IE "Default DPCH Offset Value".

## 8.3.6 Inter-RAT handover to UTRAN

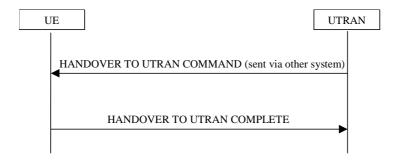


Figure 8.3.6-1: Inter-RAT handover to UTRAN, successful case

## 8.3.6.1 General

The purpose of the inter-RAT handover procedure is to, under the control of the network, transfer a connection between the UE and another radio access technology (e.g. GSM) to UTRAN.

This procedure may be used to perform CS handover which applies when there is a signalling connection to the CS domain.

When the UE supports Inter Rat PS handover, this procedure may be used to perform PS handover which applies when the there is only a signalling connection to the PS domain.

This procedure may be used to perform simultaneous CS and PS handover (i.e. DTM Handover) which applies when the are signalling connections to both CS and PS domains.

## 8.3.6.2 Initiation

The procedure is initiated when a radio access technology other than UTRAN, e.g. GSM, using radio access technology-specific procedures, orders the UE to make a handover to UTRAN.

A HANDOVER TO UTRAN COMMAND message is sent to the UE via the radio access technology from which inter-RAT handover is performed.

In case UTRAN decides to uses a predefined or default radio configuration that is stored in the UE, it should include the following information in the HANDOVER TO UTRAN COMMAND message.

- the IE "New U-RNTI" to be assigned;
- the IE "Predefined configuration identity", to indicate which pre-defined configuration of RB, transport channel and physical channel parameters shall be used; or
- the IE "Default configuration mode" and IE "Default configuration identity", to indicate which default configuration of RB, transport channel and physical channel parameters shall be used;
- PhyCH information elements.
- NOTE 1: When using a predefined or default configuration during handover to UTRAN, UTRAN can only assign values of IEs "New U-RNTI" and "scrambling code" that are within the special subranges defined exclusively for this procedure. UTRAN may re- assign other values after completion of the handover procedure.
- NOTE 2: When using a predefined or default configuration during handover to UTRAN, fewer IEs are signalled; when using this signalling option some parameters e.g. concerning compressed mode, DSCH can not be configured. In this case, the corresponding functionality can not be activated immediately.
- NOTE 3: When using a predefined or default configuration, the HANDOVER TO UTRAN COMMAND should not include more than one radio link. If UTRAN includes more than one radio link in the HANDOVER TO UTRAN COMMAND using a predefined or default configuration, the UE behaviour is unspecified.

In case UTRAN does not use a predefined radio configuration that is stored in the UE, it should include the following information in the HANDOVER TO UTRAN COMMAND message.

- the IE "New U-RNTI" to be assigned;
- the complete set of RB, TrCH and PhyCH information elements to be used.

# 8.3.6.3 Reception of HANDOVER TO UTRAN COMMAND message by the UE

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

The UE shall act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following.

### The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

#### The UE shall:

- 1> store a U-RNTI value (32 bits), which is derived by the IEs "SRNC identity" and "S-RNTI 2" included in IE "U-RNTI-short". In order to produce a full size U-RNTI value, a full size "S-RNTI" (20 bits) shall be derived by padding the IE "S-RNTI 2" with 10 zero bits in the most significant positions; and
- 1> initialise the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS with the signalling connections that remains after the handover according to the specifications of the source RAT;
- 1> initialise the variable UE\_CAPABILITIES\_TRANSFERRED with the UE capabilities that have been transferred to the network up to the point prior to the handover, if any;
- 1> initialise the variable TIMERS\_AND\_CONSTANTS to the default values and start to use those timer and constants values:
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Predefined configuration":
  - 2> initiate the radio bearer and transport channel configuration in accordance with the predefined parameters identified by the IE "Predefined configuration identity";
  - 2> initiate the physical channels in accordance with the predefined parameters identified by the IE "Predefined radio configuration identity" and the received physical channel information elements;
  - 2> store information about the established radio access bearers and radio bearers according to the IE "Predefined configuration identity"; and
  - 2> set the IE "RAB Info Post" in the variable ESTABLISHED\_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED\_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration" and IE "Preconfiguration mode" is set to "Default configuration":
  - 2> initiate the radio bearer and transport channel configuration in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity";
  - 2> initiate the physical channels in accordance with the default parameters identified by the IE "Default configuration mode" and IE "Default configuration identity" and the received physical channel information elements;
- NOTE 1: IE "Default configuration mode" specifies whether the FDD or TDD version of the default configuration shall be used.
  - 2> set the IE "RAB Info Post" in the variable ESTABLISHED\_RABS and the IE "Re-establishment timer" in the IE "RAB Info" in the variable ESTABLISHED\_RABS to "useT314".
- 1> if IE "Specification mode" is set to "Preconfiguration":

- 2> use the following values for parameters that are neither signalled within the HANDOVER TO UTRAN COMMAND message nor included within pre-defined or default configuration:
  - 3> 0 dB for the power offset P Pilot-DPDCH bearer in FDD;
  - 3> calculate the Default DPCH Offset Value using the following formula:
  - 3> in FDD:

Default DPCH Offset Value = (SRNTI 2 mod 600) \* 512

3> in TDD:

Default DPCH Offset Value = (SRNTI 2 mod 7)

- 3> handle the above Default DPCH Offset Value as if an IE with that value was included in the message, as specified in subclause 8.6.6.21.
- 1> if IE "Specification mode" is set to "Complete specification":
  - 2> initiate the radio bearer, transport channel and physical channel configuration in accordance with the received radio bearer, transport channel and physical channel information elements.
- 1> perform an open loop estimation to determine the UL transmission power according to subclause 8.5.3;
- 1> set the IE "START" for each CN domain, in the IE "START list" in the HANDOVER TO UTRAN COMPLETE message equal to the START value for each CN domain stored in the USIM if the USIM is present, or as stored in the UE for each CN domain if the SIM is present;
- NOTE 2: Keys received while in another RAT are not regarded as "new" (i.e.do not trigger the actions in subclause 8.1.12.3.1) in a subsequent security mode control procedure in UTRAN, irrespective of whether the keys are already being used in the other RAT or not. If the UE has received new keys in the other RAT before handover, then the START values in the USIM (sent in the HANDOVER TO UTRAN COMPLETE message and in the INTER\_RAT\_HANDOVER\_INFO sent to the BSS while in the other RAT) will not reflect the receipt of these new keys If ciphering has been active for the CS domain in the other RAT, then during the first security mode control procedure following the Inter-RAT handover to UTRAN procedure, UE activates integrity protection using the integrity key of the key set used. The term "key set used" denotes the key set that was used in the last successfully completed RRC Security Mode Control (UTRAN), RR Cipher Mode Control procedure or GMM Authentication and Ciphering procedure (GERAN) after entering connected mode in UTRAN or GERAN. The term "if ciphering has been active for the CS domain" is defined by a successfully completed RRC Security Mode Control procedure with "Ciphering Mode Info" (UTRAN) or RR Cipher Mode Control procedure (GERAN) for the CS domain. More specifically the state of ciphering refers to the establishment of a security context where the key is loaded from the (U)SIM to the ME even if the security command indicates NULL ciphering ("no ciphering" in GERAN or UEA0 in UTRAN).
- 1> set the value of "THRESHOLD" in the variable "START\_THRESHOLD" to the 20 MSBs of the value stored in the USIM [50] for the maximum value of START for each CN Domain, or to the default value in [40] if the SIM is present;
- 1> if ciphering is indicated in the HANDOVER TO UTRAN COMMAND by the presence of the IE "Ciphering Algorithm":
  - 2> for the handover of CS domain, indicated by the IE "CN domain identity" of the IE "RAB info" of the IE "RAB information to setup" set to "CS domain" or absence of this IE, if ciphering was not active in the radio access technology from which inter-RAT handover is performed:
    - 3> the UE behaviour is unspecified.
- NOTE 2a: The distinction between CS and PS domains is that CS ciphering must be maintained across an inter-RAT handover procedure, whereas PS ciphering in UTRAN is not dependent on previous ciphering status in the source radio access technology.
  - 2> set the variable LATEST\_CONFIGURED\_CN\_DOMAIN to the value indicated in the IE "CN domain identity" of the IE "RAB info" of the IE "RAB information to setup" if all instances of the IE indicate the

- same CN domain, or to the CS domain when this IE is either not present or different instances indicate different CN domains;
- 2> for the CN domain in variable LATEST\_CONFIGURED\_CN\_DOMAIN set the IE "Status" in the variable CIPHERING\_STATUS to "Started";
- 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN is set to "CS domain":
  - 3> set the 20 MSB of the HFN component of the COUNT-C variable for all signalling radio bearers to the "START" value from the IE "UE security information" in the variable INTER RAT HANDOVER INFO TRANSFERRED.
- 2> else if the variable LATEST\_CONFIGURED\_CN\_DOMAIN is set to "PS domain":
  - 3> set the 20 MSB of the HFN component of the COUNT-C variable for all signalling radio bearers to the "START" value from the IE "UE security information2" in the variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED.
- 2> if the CN domain indicated in the IE "CN domain identity" of any instance of the IE "RAB info" in the IE "RAB information to setup" is "CS domain":
  - 3> set the 20 MSB of the HFN component of the COUNT-C variable for all CS domain radio bearers to the "START" value included in the IE "UE security information" in the variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED:
  - 3> set the IE "Status" in the variable CIPHERING\_STATUS to "Started".
- 2> if the CN domain indicated in the IE "CN domain identity" of any instance of the IE "RAB info" in the IE "RAB information to setup" is "PS domain":
  - 3> set the 20 MSB of the HFN component of the COUNT-C variable for all PS domain radio bearers to the "START" value included in the IE "UE security information2" in the variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED;
  - 3> set the IE "Status" in the variable CIPHERING\_STATUS to "Started".
- 2> set the remaining LSBs of the HFN component of COUNT-C for all radio bearers to zero;
- 2> not increment the HFN component of COUNT-C for radio bearers using RLC-TM, i.e. keep the HFN value fixed without incrementing every CFN cycle;
- 2> set the CFN component of the COUNT-C variable for radio bearers using RLC-TM to the value of the CFN as calculated in subclause 8.5.15;
- 2> for all user radio bearers belonging to the "CS domain" and for signalling radio bearers when the variable LATEST\_CONFIGURED\_CN\_DOMAIN is set to "CS domain":
  - 3> apply the algorithm according to IE "Ciphering Algorithm" with the ciphering key of the key set used and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.
- 2> for all user radio bearers belonging to the "PS domain" and for signalling radio bearers when the variable LATEST\_CONFIGURED\_CN\_DOMAIN is set to "PS domain":
  - 3> apply the algorithm according to IE "Ciphering Algorithm" with the ciphering key stored in the USIM/SIM and apply ciphering immediately upon reception of the HANDOVER TO UTRAN COMMAND.
- NOTE 3: If ciphering is indicated in the HANDOVER TO UTRAN COMMAND, UTRAN should not include the IE "Ciphering mode info" in the SECURITY MODE COMMAND message that starts Integrity protection.
- NOTE 4: DTM Handover is not possible if the IE "specification mode" is set to "Preconfiguration" due to the existence of a single IE "RAB Info".
- 1> if ciphering is not indicated in the HANDOVER TO UTRAN COMMAND:

- 2> for the CN domain(s) included in the IE "CN domain identity" which is included in the IE "RAB info" of the IE "RAB information to setup", or the CS domain when these IEs are not present:
  - 3> set the IE "Status" in the variable CIPHERING\_STATUS to "Not Started".

If the UE succeeds in establishing the connection to UTRAN, it shall:

- 1> if "RAB Info" list contained only one CN domain identity in IE "CN domain identity":
  - 2> if CN domain is set to CS domain only indicate to upper layers that no CN system information is available for any domain other than the CS domain (see NOTE 5);
  - 2> if CN domain is set to PS domain only indicate to upper layers that no CN system information is available for any domain other than the PS domain (see NOTE 6).
- 1> if "RAB Info" list contained RABs for the PS and CS domain:
  - 2> indicate to upper layers that CN system information is available for the PS and CS domain (see NOTE 7).
- NOTE 5: After CS handover has been completed, the UTRAN should provide the UE with the CN system information of the PS domain as soon as possible, in order not to delay access to the PS domain.
- NOTE 6: After PS handover has been completed, the UTRAN should provide the UE with the CN system information of the CS and PS domain as soon as possible in order not to delay access to the CS domain and trigger a NAS procedure for the PS domain.
- NOTE 7: After DTM handover has been completed, the UTRAN should provide the UE with the CN system information of the PS domain as soon as possible in order to trigger a NAS procedure for the PS domain.
- 1> if the USIM or SIM is present:
  - 2> set the START value stored in the USIM [50] if present, and as stored in the UE if the SIM is present for any CN domain to the value "THRESHOLD" of the variable START\_THRESHOLD.
- 1> if the IE "Status" in the variable CIPHERING\_STATUS of a CN domain is set to "Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
  - 2> include the IE "COUNT-C activation time" in the response message and specify a CFN value for this IE other than the default, "Now", that is a multiple of 8 frames (CFN mod 8 =0) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted;
  - 2> at the CFN value as indicated in the response message in the IE "COUNT-C activation time" for radio bearers using RLC-TM:
    - 3> set the 20 MSB of the HFN component of the COUNT-C variable common for all transparent mode radio bearers of this CN domain to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
    - 3> set the remaining LSBs of the HFN component of COUNT-C to zero;
    - 3> increment the HFN component of the COUNT-C variable by one even if the "COUNT-C activation time" is equal to zero;
    - 3> set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
    - 3> step the COUNT-C variable, as normal, at each CFN value. The HFN component is no longer fixed in value but incremented at each CFN cycle.
- 1> if the IE "Status" in the variable CIPHERING\_STATUS of a CN domain is set to "Not Started" and transparent mode radio bearers have been established by this procedure for that CN domain:
  - 2> initialise the 20 MSB of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value as indicated in the IE "START list" of the response message for the relevant CN domain;

- 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
- 2> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
- 1> for 3.84/7.68 Mcps TDD, if the HANDOVER TO UTRAN COMMAND provides for E-DCH/HS-DSCH operation without an uplink DPCH:
  - 2> the UE shall obtain timing advance for the 3.84/7.68 Mcps TDD cell according to [15] before transmitting on the uplink DCCH.
- 1> transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH, using, if ciphering has been started, the new ciphering configuration;
- 1> when the HANDOVER TO UTRAN COMPLETE message has been submitted to lower layers for transmission:
  - 2> enter UTRA RRC connected mode in state CELL\_DCH;
  - 2> initialise variables upon entering UTRA RRC connected mode as specified in subclause 13.4;
  - 2> update the variable UE\_CAPABILITY\_TRANSFERRED with the UE capabilities stored in the variable INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED.
- 1> and the procedure ends.

# 8.3.6.4 Invalid Handover to UTRAN command message

If the UE receives a HANDOVER TO UTRAN COMMAND message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling according to the source radio access technology. The UE shall:

- 1> if allowed by the source RAT:
  - 2> transmit an RRC FAILURE INFO message to the source radio access technology; and
  - 2> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION;
- 1> Other details may be provided in the specifications related to the source radio access technology.

NOTE: The other RAT may include the above diagnostics information in a subsequent handover request towards the same RNC.

## 8.3.6.4a Unsupported configuration in HANDOVER TO UTRAN COMMAND message

If the UE does not support the configuration included in the HANDOVER TO UTRAN COMMAND message, e.g., the message includes a pre-defined configuration that the UE has not stored, the UE shall:

- 1> continue the connection using the other radio access technology; and
- 1> indicate the failure to the other radio access technology.

# 8.3.6.5 UE fails to perform handover

If the UE does not succeed in establishing the connection to UTRAN, it shall:

- 1> terminate the procedure including release of the associated resources;
- 1> resume the connection used before the handover; and
- 1> indicate the failure to the other radio access technology.

Upon receiving an indication about the failure from the other radio access technology, UTRAN should release the associated resources and the context information concerning this UE.

# 8.3.6.6 Reception of message HANDOVER TO UTRAN COMPLETE by the UTRAN

Upon receiving a HANDOVER TO UTRAN COMPLETE message, UTRAN should consider the inter-RAT handover procedure as having been completed successfully and indicate this to the Core Network.

# 8.3.7 Inter-RAT handover from UTRAN



Figure 8.3.7-1: Inter-RAT handover from UTRAN, successful case

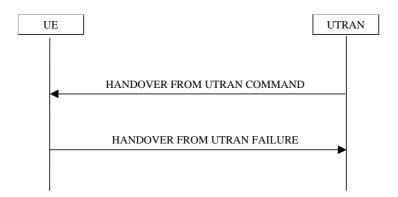


Figure 8.3.7-2: Inter-RAT handover from UTRAN, failure case

## 8.3.7.1 General

The purpose of the inter-RAT handover procedure is to, under the control of the network, transfer a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL\_DCH state.

This procedure may be used to perform CS handover which applies when the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS includes at least the CN domain identity "CS Domain".

When the UE supports Inter Rat PS handover, this procedure may be used to perform PS handover which applies when the variable ESTABLISHED SIGNALLING CONNECTIONS includes at least the CN domain identity "PS Domain".

This procedure may be used to perform simultaneous CS and PS handover which applies when the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS includes CN domain identities for both "CS Domain" and "PS Domain".

## 8.3.7.2 Initiation

The procedure is initiated when UTRAN orders a UE in CELL\_DCH state, to make a handover to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a HANDOVER FROM UTRAN COMMAND message.

# 8.3.7.3 Reception of a HANDOVER FROM UTRAN COMMAND message by the UE

The UE shall be able to receive a HANDOVER FROM UTRAN COMMAND message and perform an inter-RAT handover, even if no prior UE measurements have been performed on the target cell.

The UE shall:

- 1> For FDD:
  - 2> if the UE has a pending "TGPS reconfiguration CFN" at the activation time received in the HANDOVER FROM UTRAN COMMAND the UE may:
    - 3> abort the pending CM activation;
    - 3> set the CM\_PATTERN\_ACTIVATION\_ABORTED to TRUE.
  - 2> otherwise:
    - 3> set the CM\_PATTERN\_ACTIVATION\_ABORTED to FALSE.
- 1> establish the connection to the target radio access technology, by using the contents of the IE "Inter-RAT message". This IE contains a message specified in another standard, as indicated by the IE "System type", and carries information about the candidate/ target cell identifier(s) and radio parameters relevant for the target radio access technology. The correspondence between the value of the IE "System type", the standard to apply and the message contained within IE "Inter RAT message" is shown in the following:

| Value of the IE "System type" | Standard to apply   | Inter RAT Message            |
|-------------------------------|---|------------------------------|
| GSM                           | GSM TS 04.18, version 8.5.0 or later, or 3GPP TS 44.018                                 | HANDOVER COMMAND             |
|                               | 3GPP TS 44.060, version 6.13.0 or later   | PS HANDOVER COMMAND          |
|                               | 3GPP TS 44.018, version 7.6.0 or later<br>and 3GPP TS 44.060, version 7.6.0 or<br>later | DTM HANDOVER COMMAND         |
| GERAN lu                      | 3GPP TS 44.118  | RADIO BEARER RECONFIGURATION |
| cdma2000                      | TIA/EIA/IS-2000 or later, TIA/EIA/IS-833 or later, TIA/EIQ/IS-834 or later              |                              |

- $1\!\!>$  if the IE "System type" has the value "GSM" or "GERAN Iu":
  - 2> if the IE "Frequency band" has the value "GSM /DCS 1800 band used":
    - 3> set the BAND\_INDICATOR [45] to "ARFCN indicates 1800 band".
  - 2> if the IE "Frequency band" has the value " GSM /PCS 1900 band used":
    - 3> set the BAND\_INDICATOR [45] to "ARFCN indicates 1900 band".
- 1> apply the "Inter RAT Message" according to the "standard to apply" in the table above.
- 1> if the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message:
  - 2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "CS domain":
    - 3> connect upper layer entities corresponding to the indicated CS domain RAB to the radio resources indicated in the inter-RAT message.
  - 2> if the IE "RAB information List" includes one IE "RAB Info" with the IE "CN domain Identity" set to "PS domain":
    - 3> connect upper layer entities corresponding to the indicated PS domain RAB to the radio resources indicated in the inter-RAT message.
    - 3> if the "System type" is "GSM":
      - 4> use the contents of the IE "GERAN system information" as the system information to begin access on the target GERAN cell.

- NOTE1: In this version of the specification the maximum number of CS domain RABs which may be included in the IE "RAB information List" is limited to 1.
- NOTE2: In handover to GERAN *Iu mode*, the RAB information is included in the RADIO BEARER RECONFIGURATION message specified in [53].
- NOTE3: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification.
- NOTE4: The UE may ignore the IE "NAS synchronisation indicator" if included in the HANDOVER FROM UTRAN COMMAND message;
- NOTE5: The UE behaviour is undefined if the IE "Re-establishment timer" in the IE "RAB info" indicates a timer different from the timer currently configured for this RAB.
- NOTE6: The IE "GERAN System Information" is constructed in the same way as in 2G to 2G PS Handover in [44].

# 8.3.7.4 Successful completion of the inter-RAT handover

Upon successfully completing the handover, UTRAN should:

- 1> release the radio connection; and
- 1> remove all context information for the concerned UE.

Upon successfully completing the handover, the UE shall:

- 1> if inter-RAT handover to GERAN *Iu mode* is performed:
  - 2> perform the actions on reception of the RADIO BEARER RECONFIGURATION message as specified in [53].
- 1> if inter-RAT handover to GERAN *Iu mode* is performed and if there are any NAS messages for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 has not yet been confirmed by RLC; or
- 1> if inter-RAT handover to other RAT than GERAN *Iu mode* is performed and if there are any NAS messages with the IE "CN domain identity" set to "CS domain" for which the successful delivery of the INITIAL DIRECT TRANSFER message or UPLINK DIRECT TRANSFER message on signalling radio bearer RB3 or signalling radio bearer RB4 that have not yet been confirmed by RLC:
  - 2> retransmit those NAS messages to the network on the newly established radio connection to the target radio access technology.
- 1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

NOTE: The release of the UMTS radio resources is initiated from the target RAT.

# 8.3.7.5 UE fails to complete requested handover

If the UE does not succeed in establishing the connection to the target radio access technology, it shall:

- 1> revert back to the UTRA configuration;
- 1> For FDD:
  - 2> if the CM\_PATTERN\_ACTIVATION\_ABORTED flag is not set to TRUE:
    - 3> establish the UTRA physical channel(s) (including HS-DSCH and E-DCH related channels. If there exists any DTX or DRX configuration, the UE shall instruct the physical layer to consider only the HS-SCCH orders which were acknowledged prior to the activation time of the received message) used at the time for reception of HANDOVER FROM UTRAN COMMAND;

- 3> if the variable DTX\_DRX\_STATUS is set to TRUE, re-configure the physical layer to perform discontinuous uplink DPCCH transmission and enable or disable discontinuous downlink reception operations according to the variable DTX\_DRX\_PARAMS at the CFN corresponding to the frame boundary that is offset by the stored value of the IE "Enabling Delay" from the frame boundary where uplink transmission resumes with the old configuration;
- 3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);
- 3> apply power control preamble according to [26] during the number of frames indicated in the IE "PC preamble" in the variable LATEST\_CONFIGURED\_SRB\_DELAY\_AND\_PC\_PREAMBLE; and
- 3> then not send any data on signalling radio bearers RB0 to RB4 during the number of frames indicated in the IE "SRB delay" in the variable LATEST\_CONFIGURED\_SRB\_DELAY\_AND\_PC\_PREAMBLE or while the physical channel is not considered established.
- 1> if the UE does not succeed to establish the UTRA physical channel(s) or for FDD if the CM\_PATTERN\_ACTIVATION\_ABORTED flag is set to TRUE:
  - 2> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";
  - 2> when the cell update procedure has completed successfully:
    - 3> proceed as below.
- 1> transmit the HANDOVER FROM UTRAN FAILURE message setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "Inter-RAT handover failure" to "physical channel failure".
- 1> When the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:
  - 2> the procedure ends.

# 8.3.7.6 Invalid HANDOVER FROM UTRAN COMMAND message

If the IE "Inter-RAT message" received within the HANDOVER FROM UTRAN COMMAND message does not include a valid inter RAT handover message in accordance with the protocol specifications for the target RAT, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> set the IE "failure cause" to the cause value "Inter-RAT protocol error";
- 1> include the IE "Inter-RAT message" in accordance with the specifications applicable to the other RAT;
- 1> transmit a HANDOVER FROM UTRAN FAILURE message on the uplink DCCH using AM RLC;
- 1> when the transmission of the HANDOVER FROM UTRAN FAILURE message has been confirmed by RLC:
  - 2> continue with any ongoing processes and procedures as if the invalid HANDOVER FROM UTRAN COMMAND message has not been received;
  - 2> and the procedure ends.

If the HANDOVER FROM UTRAN COMMAND message contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

1> set the IE "RRC transaction identifier" in the HANDOVER FROM UTRAN FAILURE message to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Rejected transactions" in the variable TRANSACTIONS; and

- 1> clear that entry;
- 1> set the IE "failure cause" to the cause value "protocol error";
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL ERROR INFORMATION;
- 1> transmit a HANDOVER FROM UTRAN FAILURE message on the uplink DCCH using AM RLC;
- 1> when the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid HANDOVER FROM UTRAN COMMAND message has not been received;
  - 2> and the procedure ends.

# 8.3.7.7 Reception of an HANDOVER FROM UTRAN FAILURE message by UTRAN

Upon receiving an HANDOVER FROM UTRAN FAILURE message, UTRAN may initiate the release the resources in the target radio access technology.

# 8.3.7.8 Unsupported configuration in HANDOVER FROM UTRAN COMMAND message

If:

- the UTRAN instructs the UE to perform a non-supported handover scenario; or
- the UTRAN instructs the UE to use a non-supported configuration; or
- the UE does not support PS Handover to GERAN, and the inter-RAT handover to other RAT than GERAN *Iu mode* is performed and the IE "RAB information List" is included in the HANDOVER FROM UTRAN COMMAND message and this IE does not include any IE "RAB Info" with the IE "CN domain Identity" set to "CS domain"; or
- the HANDOVER FROM UTRAN COMMAND message includes the IE "RAB information List" and includes at least one IE "RAB Info" with the IE "CN domain Identity" set to "PS domain", and the IE "GERAN System Information" is not present:

## the UE shall:

- 1> transmit a HANDOVER FROM UTRAN FAILURE message, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "Inter-RAT handover failure" to "configuration unacceptable";
  - 2> when the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:
    - 3> resume normal operation as if the invalid HANDOVER FROM UTRAN COMMAND message has not been received:
    - 3> and the procedure ends.

# 8.3.7.8a Reception of HANDOVER FROM UTRAN COMMAND message by UE in CELL\_FACH

If the UE receives HANDOVER FROM UTRAN COMMAND while in CELL\_FACH, the UE shall:

- 1> transmit a HANDOVER FROM UTRAN FAILURE message, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the HANDOVER FROM UTRAN COMMAND message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "Inter-RAT handover failure" to "protocol error", include IE "Protocol error information"; and
  - 2> set the value of IE "Protocol error cause" to "Message not compatible with receiver state";
  - 2> when the HANDOVER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:
    - 3> resume normal operation as if the invalid HANDOVER FROM UTRAN COMMAND message has not been received;
    - 3> and the procedure ends.

## 8.3.8 Inter-RAT cell reselection to UTRAN

## 8.3.8.1 General

The purpose of the inter-RAT cell reselection procedure to UTRAN is to transfer, under the control of the UE and to some extent the source radio access technology, a connection between the UE and another radio access technology (e.g. GSM/GPRS, but not UTRAN) to UTRAN.

### 8.3.8.2 Initiation

When the UE makes an inter-RAT cell reselection to UTRAN according to the criteria specified in [4], it shall initiate this procedure. The inter-RAT cell reselection made by the UE may use system information broadcast from the source radio access technology or UE dedicated information.

If the NAS procedures associated with inter-system change specified in [5] require the establishment of an RRC connection, the UE shall:

1> set the variable ESTABLISHMENT\_CAUSE to "Inter-RAT cell reselection";

NOTE: This value of ESTABLISHMENT\_CAUSE has priority over the cause requested by upper layers.

- 1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3;
- 1> after initiating an RRC connection establishment:
  - 2> release all resources specific to the other radio access technology.

If the NAS procedures associated with inter-system change specified in [5] do not require the establishment of an RRC connection, the UE shall:

- 1> enter idle mode in the target cell without accessing the cell; and
- 1> release all resources specific to the other radio access technology.

### 8.3.8.2a Initiation of inter-RAT cell reselection from GERAN *lu mode*

When the UE performs an inter-RAT cell reselection from GERAN *Iu mode* Cell\_Shared state, the UE shall:

1> initiate the cell update procedure as specified for the cell reselection case in CELL\_FACH and CELL\_PCH states, using the cause "cell reselection" and setting the G-RNTI in the IE "U-RNTI".

When the UE performs an inter-RAT cell reselection from GERAN *Iu mode* GRA\_PCH state, the UE shall:

- 1> compare the GRA identity which the MS had been assigned to in GERAN against the URA identities which are broadcast in the UTRAN cell.
- 1> If the assigned GRA identity is not present in the list of URA identities that are broadcast in the UTRAN cell:
  - 2> initiate the URA update procedure as specified for the URA reselection case in URA\_PCH state, using the cause "change of URA" and setting the G-RNTI in the IE "U-RNTI".

### The UE shall:

1> set the following variables equal to the corresponding variables in GERAN *Iu mode*:

CIPHERING\_STATUS

ESTABLISHED RABS

ESTABLISHED\_SIGNALLING\_CONNECTIONS

INTEGRITY\_PROTECTION\_INFO

INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED

LATEST\_CONFIGURED\_CN\_DOMAIN

START\_THRESHOLD

UE\_CAPABILITY\_TRANSFERRED.

1> set the new uplink and downlink HFN of RB2 to MSB<sub>20</sub>(MAX(uplink HFN of RB2, downlink HFN of RB2)).

NOTE: MSB<sub>20</sub>() operation provides the HFN mapping from GERAN *Iu mode* to UTRAN. In GERAN *Iu mode* the length of HFN component of the COUNT-C of RB2 is longer than 20 bits.

1> initialise the variable TIMERS\_AND\_CONSTANTS to the default values and start to use those timer and constants values.

## 8.3.8.3 UE fails to complete an inter-RAT cell reselection

If the inter-RAT cell reselection fails before the UE has initiated the RRC connection establishment the UE may return back to the other radio access technology.

If the RRC connection establishment fails, the UE shall enter idle mode.

## 8.3.8.3a UE fails to complete an inter-RAT cell reselection from GERAN *lu mode*

When the UE performs an inter-RAT cell reselection from GERAN Iu mode to UTRAN, and the cell reselection fails:

1> the UE may return back to the GERAN *Iu mode* state from which it initiated the inter-RAT cell reselection.

## 8.3.9 Inter-RAT cell reselection from UTRAN

## 8.3.9.1 General

The purpose of the inter-RAT cell reselection procedure from UTRAN is to transfer, under the control of the UE and to some extent the UTRAN, a connection between the UE and UTRAN to another radio access technology (e.g. GSM/GPRS).

### 8.3.9.2 Initiation

This procedure is applicable in states CELL\_FACH, CELL\_PCH or URA\_PCH.

When the UE based on received system information makes a cell reselection to a radio access technology other than UTRAN, e.g. GSM/GPRS, according to the criteria specified in [4], the UE shall:

- 1> If the NAS procedures associated with inter-system change specified in [5] require the establishment of a connection:
  - 2> initiate the establishment of a connection to the target radio access technology according to its specifications.

### 8.3.9.2a Initiation of inter-RAT cell reselection to GERAN *lu mode*

When the UE in CELL\_PCH or CELL\_FACH state performs an inter-RAT cell reselection to GERAN *Iu mode*, according to the criteria specified in [4], the UE shall:

1> initiate the cell update procedure according to 3GPP TS 44.118 [53], setting the U-RNTI in the IE "G-RNTI".

When the UE in URA\_PCH state performs an inter-RAT cell reselection to GERAN *Iu mode*, according to the criteria specified in [4], the UE shall:

- 1> compare the URA identity which the UE had been assigned to in UTRAN against the GRA identities which are broadcast in the GERAN cell;
- 1> If the assigned URA identity is not present in the list of GRA identities that are broadcast in the GERAN cell:
  - 2> initiate the GRA update procedure as specified in 3GPP TS 44.118 [53], setting the U-RNTI in the IE "G-RNTI".

## 8.3.9.3 Successful cell reselection

When the UE has succeeded in reselecting a cell in the target radio access technology, the UE shall:

1> release all UTRAN specific resources.

UTRAN should:

1> release all UE dedicated resources upon indication that the UE has completed a connection establishment to the other radio access technology.

## 8.3.9.4 UE fails to complete an inter-RAT cell reselection

If the inter-RAT cell reselection fails, the UE shall:

1> resume the connection to UTRAN using the resources used before initiating the inter-RAT cell reselection procedure.

# 8.3.10 Inter-RAT cell change order to UTRAN

### 8.3.10.1 General

The purpose of the inter-RAT cell change order to UTRAN procedure is to transfer, under the control of the source radio access technology, a connection between the UE and another radio access technology (e.g. GSM/GPRS) to UTRAN.

### 8.3.10.2 Initiation

The procedure is initiated when a radio access technology other than UTRAN, e.g. GSM/GPRS, using procedures specific for that RAT, orders the UE to change to a UTRAN cell.

NOTE: Within the message used to order the UE to change to a UTRAN cell, the source RAT should specify the identity of the target UTRAN cell as specified in the specifications for that RAT.

The UE shall:

1> set the variable ESTABLISHMENT\_CAUSE to "Inter-RAT cell change order";

NOTE: This value of ESTABLISHMENT\_CAUSE has priority over the cause requested by upper layers.

1> initiate an RRC connection establishment procedure as specified in subclause 8.1.3.

## 8.3.10.3 UE fails to complete an inter-RAT cell change order

If the inter-RAT cell reselection fails the UE shall return to the other radio access technology and proceed as specified in the appropriate specifications for that RAT.

NOTE 3: The cell change was network ordered. Therefore, failure to change to the target cell should not cause the UE to move to UE- controlled cell selection.

# 8.3.11 Inter-RAT cell change order from UTRAN



Figure 8.3.11-1: Inter-RAT cell change order from UTRAN

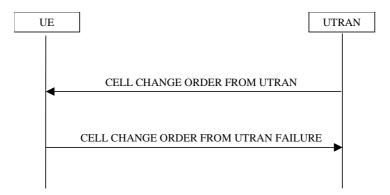


Figure 8.3.11-2: Inter-RAT cell change order from UTRAN, failure case

## 8.3.11.1 General

The purpose of the inter-RAT cell change order procedure is to transfer, under the control of the network, a connection between the UE and UTRAN to another radio access technology (e.g. GSM). This procedure may be used in CELL\_DCH and CELL\_FACH state. This procedure may be used when no RABs are established or when the established RABs are only from PS domain. This procedure may not be used when there is no PS signalling connection.

## 8.3.11.2 Initiation

The procedure is initiated when UTRAN orders a UE in CELL\_DCH or CELL\_FACH state, to make a cell change to a radio access technology other than UTRAN, e.g. GSM.

To initiate the procedure, UTRAN sends a CELL CHANGE ORDER FROM UTRAN message.

# 8.3.11.3 Reception of an CELL CHANGE ORDER FROM UTRAN message by the UE

The UE shall be able to receive a CELL CHANGE ORDER FROM UTRAN message and perform a cell change order to another RAT, even if no prior UE measurements have been performed on the target cell.

If the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS does not include the CN domain identity "PS domain", or if the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS includes the CN domain identity "CS domain":

1> the UE shall act as if the message was never received.

#### The UE shall:

- 1> For FDD:
  - 2> if the UE has a pending "TGPS reconfiguration CFN" at the activation time received in the CELL CHANGE ORDER FROM UTRAN message the UE may:
    - 3> abort the pending CM activation;
    - 3> set the CM\_PATTERN\_ACTIVATION\_ABORTED to TRUE.
  - 2> otherwise:
    - 3> set the CM\_PATTERN\_ACTIVATION\_ABORTED to FALSE.
- 1> start timer T309; and
- 1> establish the connection to the other radio access technology, as specified within IE "Target cell description". This IE specifies the target cell identity, in accordance with the specifications for that other RAT. In case the target cell is a GSM/ GPRS cell, IE "Target cell description" may also include IE "NC mode", which specifies the cell selection mode to be applied in the target cell; and
- 1> if IE "NC mode" is not included in the CELL CHANGE ORDER FROM UTRAN:
  - 2> retrieve it from the target cell as specified in [43];
  - 2> act upon IE "NC mode" as specified in [43].
- 1> if the IE "RAB Information List" is included in the CELL CHANGE ORDER FROM UTRAN message:
  - 2> ignore the contents of the IE "RAB Information List".
- NOTE: Requirements concerning the establishment of the radio connection towards the other radio access technology and the signalling procedure are outside the scope of this specification. In case of GSM/GPRS proceed according to the procedure Network control cell reselection procedure as specified in [44].
- 1> if the UE supports UTRAN to GERAN Network Assisted Cell Change, the IE "Geran System Information" is present and the UE is in CELL\_DCH state:
  - 2> if according to [44] the IE "GERAN System Information" includes a correct and consistent set of SI or PSI messages:
    - 3> use this information as the system information to begin access on the target GERAN cell.
  - 2> otherwise:
    - 3> ignore the IE "GERAN System Information" and continue the Cell Change Order procedure.
- NOTE: The IE "GERAN System Information" is constructed in the same way as in 2G to 2G NACC, i.e. the PSI messages are encoded as such, whereas the SI messages exclude 2 octets of headers, see [44].

## 8.3.11.4 Successful completion of the cell change order

The UE regards the procedure as completed when it has received a successful response from the target RAT, e.g. in case of GSM when it received the response to a (PACKET) CHANNEL REQUEST in the new cell.

Upon successful completion of the cell change order, the UE shall:

- 1> stop timer T309;
- 1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4.

Upon indication of the UE having successfully completed the cell change order, UTRAN should:

- 1> release the radio connection; and
- 1> remove all context information for the concerned UE.

NOTE: The release of the UMTS radio resources is initiated from another RAT.

## 8.3.11.5 Expiry of timer T309 or UE fails to complete requested cell change order

If:

- timer T309 expires prior to the successful establishment of a connection to the target RAT; or
- if the establishment of the connection to the other RAT failed due to other reasons e.g. (random) access failure, rejection due to lack of resources:

#### the UE shall:

- 1> if it received the CELL CHANGE ORDER FROM UTRAN message in state CELL\_DCH:
  - 2> For TDD or for FDD if the CM\_PATTERN\_ACTIVATION\_ABORTED flag is not set to TRUE:
    - 3> revert back to the UTRA configuration;
    - 3> establish the UTRA physical channel(s) (including HS-DSCH and E-DCH related channels) used at the time for reception of CELL CHANGE ORDER FROM UTRAN.
  - 2> For FDD:
    - 3> perform the physical layer synchronisation procedure A as specified in [29];
    - 3> if there exists any DTX or DRX configuration prior to the reception of the CELL CHANGE ORDER FROM UTRAN COMMAND, instruct the physical layer to consider only the HS-SCCH orders which were acknowledged prior to the activation time of the received message;
    - 3> if the variable DTX\_DRX\_STATUS is set to TRUE, re-configure the physical layer to perform discontinuous uplink DPCCH transmission and enable or disable discontinuous downlink reception operations according to the variable DTX\_DRX\_PARAMS at the CFN corresponding to the frame boundary that is offset by the stored value of the IE "Enabling Delay" from the frame boundary where uplink transmission resumes with the old configuration;
    - 3> apply power control preamble according to [26] during the number of frames indicated in the IE "PC preamble" in the variable LATEST\_CONFIGURED\_SRB\_DELAY\_AND\_PC\_PREAMBLE; and
    - 3> then not send any data on signalling radio bearers RB0 to RB4 during the number of frames indicated in the IE "SRB delay" in the variable LATEST\_CONFIGURED\_SRB\_DELAY\_AND\_PC\_PREAMBLE or while the physical channel is not considered established;
    - 3> if the CM\_PATTERN\_ACTIVATION\_ABORTED flag is set to TRUE or if the UE does not succeed in establishing the UTRA physical channel(s):
      - 4> perform a cell update procedure according to subclause 8.3.1 with cause "Radio link failure";
      - 4> when the cell update procedure has completed successfully:

- 5> proceed as below.
- 3> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:
  - 4> include the IE "RRC transaction identifier"; and
  - 4> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 4> clear that entry;
  - 4> set the IE "Inter-RAT change failure" to "physical channel failure".
- 3> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission, the procedure ends.
- 1> if the UE receives the CELL CHANGE ORDER FROM UTRAN message in CELL\_FACH state:
  - 2> revert to the cell it was camped on at the reception of the CELL CHANGE ORDER FROM UTRAN message;
  - 2> if the UE is unable to return to this cell:
    - 3> select a suitable UTRA cell according to [4];
    - 3> initiate the cell update procedure according to subclause 8.3.1 using the cause "cell re-selection";
    - 3> when the cell update procedure completed successfully:
      - 4> proceed as below.
  - 2> transmit the CELL CHANGE ORDER FROM UTRAN FAILURE message setting the information elements as specified below:
    - 3> include the IE "RRC transaction identifier"; and
    - 3> set it to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Accepted transactions" in the variable TRANSACTIONS; and
    - 3> clear that entry;
    - 3> set the IE "Inter-RAT change failure" to "physical channel failure".
  - 2> When the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layer for transmission:
    - 3> the procedure ends.

# 8.3.11.6 Unsupported configuration in CELL CHANGE ORDER FROM UTRAN message

If the UTRAN instructs the UE to perform a non-supported cell change order scenario or to use a non-supported configuration, the UE shall:

- 1> transmit a CELL CHANGE ORDER FROM UTRAN FAILURE message, setting the information elements as specified below:
  - 2> include the IE "RRC transaction identifier"; and
  - 2> set it to the value of "RRC transaction identifier" in the entry for the received message in the table "Accepted transactions" in the variable TRANSACTIONS; and
  - 2> clear that entry;
  - 2> set the IE "Inter-RAT change failure" to "configuration unacceptable";

- 2> when the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:
  - 3> resume normal operation as if the CELL CHANGE ORDER FROM UTRAN message has not been received;
  - 3> and the procedure ends.

## 8.3.11.7 Invalid CELL CHANGE ORDER FROM UTRAN message

If the CELL CHANGE ORDER FROM UTRAN message contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> set the IE "RRC transaction identifier" in the CELL CHANGE ORDER FROM UTRAN FAILURE message to the value of "RRC transaction identifier" in the entry for the CELL CHANGE ORDER FROM UTRAN message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> set the IE "Inter-RAT change failure" to the cause value "protocol error";
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION;
- 1> transmit a CELL CHANGE ORDER FROM UTRAN FAILURE message on the uplink DCCH using AM RLC;
- 1> when the CELL CHANGE ORDER FROM UTRAN FAILURE message has been submitted to lower layers for transmission:
  - 2> resume normal operation as if the invalid CELL CHANGE ORDER FROM UTRAN message has not been received;
  - 2> and the procedure ends.

# 8.4 Measurement procedures

## 8.4.0 Measurement related definitions

UTRAN may control a measurement in the UE either by broadcast of SYSTEM INFORMATION and/or by transmitting a MEASUREMENT CONTROL message.

The following information is used to control the UE measurements and the measurement results reporting:

- 1. **Measurement identity**: A reference number that should be used by the UTRAN when setting up, modifying or releasing the measurement and by the UE in the measurement report.
- 2. **Measurement command**: One out of three different measurement commands.
  - Setup: Setup a new measurement.
  - Modify: Modify a previously defined measurement, e.g. to change the reporting criteria.
  - Release: Stop a measurement and clear all information in the UE that are related to that measurement.
- 3. **Measurement type**: One of the types listed below describing what the UE shall measure.

Presence or absence of the following control information depends on the measurement type

- 4. **Measurement objects:** The objects on which the UE shall measure measurement quantities, and corresponding object information.
- 5. **Measurement quantity:** The quantity the UE shall measure on the measurement object. This also includes the filtering of the measurements.

- 6. **Reporting quantities:** The quantities the UE shall include in the report in addition to the quantities that are mandatory to report for the specific event.
- 7. **Measurement reporting criteria**: The triggering of the measurement report, e.g. periodical or event-triggered reporting.
- 8. **Measurement Validity**: Defines in which UE states the measurement is valid.
- 9. **Measurement reporting mode**: This specifies whether the UE shall transmit the measurement report using AM or UM RLC.
- 10. **Additional measurement identities**: A list of references to other measurements. When this measurement triggers a measurement report, the UE shall also include the reporting quantities for the measurements referenced by the additional measurement identities.

All these measurement parameters depend on the measurement type and are described in more detail in clause 14.

The different types of measurements are:

- **Intra-frequency measurements**: measurements on downlink physical channels at the same frequency as the active set. A measurement object corresponds to one cell. Detailed description is found in subclause 14.1.
- **Inter-frequency measurements**: measurements on downlink physical channels at frequencies that differ from the frequency of the active set and on downlink physical channels in the active set. A measurement object corresponds to one cell. Detailed description is found in subclause 14.2.
- **Inter-RAT measurements**: measurements on downlink physical channels belonging to another radio access technology than UTRAN, e.g. GSM. A measurement object corresponds to one cell. Detailed description is found in subclause 14.3.
- **Traffic volume measurements**: measurements on uplink traffic volume. A measurement object corresponds to one cell. Detailed description is found in subclause 14.4.
- Quality measurements: Measurements of downlink quality parameters, e.g. downlink transport block error rate. A measurement object corresponds to one transport channel in case of BLER. A measurement object corresponds to one timeslot in case of SIR (TDD only). Detailed description is found in subclause 14.5.
- **UE-internal measurements**: Measurements of UE transmission power and UE received signal level. Detailed description is found in subclause 14.6.
- **UE positioning measurements:** Measurements of UE position. Detailed description is found in subclause 14.7.

The UE shall support a number of measurements running in parallel as specified in [19] and [20]. The UE shall also support that each measurement is controlled and reported independently of every other measurement.

Cells that the UE is monitoring are grouped in the UE into three mutually exclusive categories:

- 1. Cells, which belong to the **active set.** User information is sent from all these cells. In FDD, the cells in the active set are involved in soft handover. In TDD the active set always comprises one cell only. The UE shall only consider active set cells included in the variable CELL\_INFO\_LIST for measurement; i.e. active set cells not included in the CELL\_INFO\_LIST shall not be considered in any event evaluation and measurement reporting.
- Cells, which are not included in the active set, but are included in the CELL\_INFO\_LIST belong to the monitored set.
- 3. Cells detected by the UE, which are neither in the CELL\_INFO\_LIST nor in the active set belong to the **detected set.** Reporting of measurements of the detected set is only applicable to intra-frequency measurements made by UEs in CELL\_DCH state.

If the IE "Cells for measurement" has been included in a MEASUREMENT CONTROL message, only monitored set cells explicitly indicated for a given intra-frequency (resp. inter-frequency, interRAT) measurement by the IE "Cells for measurement" shall be considered for measurement. If the IE "Cells for measurement" has not been included in a MEASUREMENT CONTROL message, all of the intra-frequency (resp. inter-frequency, inter RAT) cells stored in the variable CELL\_INFO\_LIST shall be considered for measurement. The IE "Cells for measurement" is not applicable to active set cells e.g. when the triggering condition refers to active set cells, the UE shall consider all active set cells in the

CELL\_INFO\_LIST for measurement irrespective if these cells are explicitly indicated by the IE "Cells for measurement".

## 8.4.1 Measurement control



Figure 8.4.1-1: Measurement Control, normal case

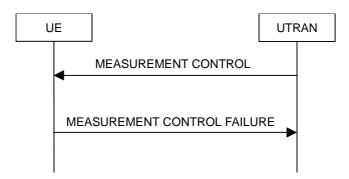


Figure 8.4.1-2: Measurement Control, failure case

## 8.4.1.1 General

The purpose of the measurement control procedure is to setup, modify or release a measurement in the UE.

In subclause 8.4.1 and its subclauses references to System Information Block type 11 mean the merge of System Information Block Type 11 and System Information Block type 11bis, if scheduled on BCH.

### 8.4.1.2 Initiation

The UTRAN may request a measurement by the UE to be setup, modified or released with a MEASUREMENT CONTROL message, which is transmitted on the downlink DCCH using AM RLC.

The UTRAN should take the UE capabilities into account when a measurement is requested from the UE.

When a new measurement is created, UTRAN should set the IE "Measurement identity" to a value, which is not used for other measurements. UTRAN may use several "Measurement identity" for the same "Measurement type". In case of setting several "Measurement identity" within a same "Measurement type", the measurement object or the list of measurement objects can be set differently for each measurement with different "Measurement identity".

When a current measurement is modified or released, UTRAN should set the IE "Measurement identity" to the value, which is used for the measurement being modified or released. In case of modifying IEs within a "Measurement identity", it is not needed for UTRAN to indicate the IEs other than modified IEs, and the UE continues to use the current values of the IEs that are not modified. UTRAN should not use "modify" to change the type of measurement stored in the variable MEASUREMENT\_IDENTITY for a given measurement identity.

## 8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

1> read the IE "Measurement command";

- 1> if the IE "Measurement command" has the value "setup":
  - 2> store this measurement in the variable MEASUREMENT\_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
  - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
    - 3> if the UE is in CELL\_FACH state:
      - 4> the UE behaviour is not specified.
  - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency:
    - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS\_IDENTITY; or
    - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements on at least one supported band of that measurement type:
      - 4> if the measurement is valid in the current RRC state of the UE:
        - 5> begin measurements according to the stored control information for this measurement identity.
- NOTE: The UE is not required to perform measurements on cells for which it needs compressed mode but a suitable compressed mode pattern is not activated.
  - 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
    - 3> if the measurement is valid in the current RRC state of the UE:
      - 4> begin measurements according to the stored control information for this measurement identity.
  - 2> for measurement type "UE positioning measurement":
    - 3> if the UE is in CELL\_FACH state:
      - 4> if IE "Positioning Method" is set to "OTDOA":
        - 5> if IE "Method Type" is set to "UE assisted":
          - 6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:
            - 7> if System Information Block type 15.4 is broadcast:
              - 8> read System Information Block type 15.4.
            - 7> act as specified in subclause 8.6.7.19.2.
        - 5> if IE "Method Type" is set to "UE based":
          - 6> if IE "UE positioning OTDOA assistance data for UE based" is not included:
            - 7> if System Information Block type 15.5 is broadcast:
              - 8> read System Information Block type 15.5.
            - 7> act as specified in subclause 8.6.7.19.2a.
  - 2> for any other measurement type:
    - 3> if the measurement is valid in the current RRC state of the UE:
      - 4> begin measurements according to the stored control information for this measurement identity.

- 1> if the IE "Measurement command" has the value "modify":
  - 2> for all IEs present in the MEASUREMENT CONTROL message:
    - 3> if a measurement was stored in the variable MEASUREMENT\_IDENTITY associated to the identity by the IE "measurement identity":
      - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
        - 5> if the UE is in CELL\_FACH state:
          - 6> the UE behaviour is not specified.
      - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "inter-frequency measurement", for any of the optional IEs "Inter-frequency measurement quantity", "Inter-frequency reporting quantity", "Measurement Validity", "Inter-frequency set update" and "parameters required for each event" (given "report criteria" is set to either "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "inter-RAT measurement", for any of the optional IEs "Inter-RAT measurement objects list", "Inter-RAT measurement quantity", and "Inter-RAT reporting quantity" that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning OTDOA assistance data" is present, for any of the optional IEs "UE positioning OTDOA neighbour cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-assisted", "UE positioning OTDOA neighbour cell info for UE-based" and "UE positioning" that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GANSS assistance data" is present, for any of the optional IEs "UE positioning GANSS reference time", "UE positioning GANSS reference UE position", "UE positioning DGANSS corrections", "UE positioning GANSS ionospheric model", "UE positioning GANSS UTC model", "UE positioning GANSS reference measurement information", "UE positioning GANSS data bit assistance", "UE positioning GANSS Time model", "UE positioning GANSS real-time integrity" that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", and "Measurement Validity" that are present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "quality measurement", for the optional IE "Quality reporting quantity" if it is present in the MEASUREMENT CONTROL message:
      - 4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", and "UE internal reporting quantity" that are present in the MEASUREMENT CONTROL message:
        - 5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;

- 5> leave all other stored information elements unchanged in the variable MEASUREMENT IDENTITY.
- 3> otherwise:
  - 4> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 2> if measurement type is set to "inter-frequency measurement":
  - 3> if "report criteria" is set to "intra-frequency measurement reporting criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
    - 4> for FDD, 3.84 Mcps TDD and 7.68 Mcps TDD; or
    - 4> for 1.28 Mcps TDD, if the UE only uses one frequency:
      - 5> leave the currently stored "inter-frequency measurement reporting criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables.
- NOTE: If the UTRAN wants to modify the inter-frequency cell info list for an inter-frequency measurement configured with event based reporting without repeating any IEs related to the configured events, one possibility is to set the IE "report criteria" to "intra-frequency measurement reporting criteria", not include the IE "parameters required for each event", and set the IE "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria".
  - 4> for 1.28 Mcps TDD, if the UE uses multiple frequencies:
    - 5> use the content of MEASUREMENT CONTROL to replace the IEs related to MEASUREMENT IDENTITY which have stored;
    - 5> not delete the unchanged values.
  - 2> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
    - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS\_IDENTITY; or
    - 3> if, according to its measurement capabilities, the UE does not require compressed mode, on at least one supported band of that measurement type, to perform the measurements:
      - 4> resume the measurements according to the new stored measurement control information.
  - 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
    - 3> if the measurement is valid in the current RRC state of the UE:
      - 4> resume measurements according to the new stored control information for this measurement identity.
  - 2> for any other measurement type:
    - 3> resume the measurements according to the new stored measurement control information.
  - 2> for measurement type "inter-RAT measurement":
    - 3> if "report criteria" is set to "inter-RAT measurement reporting criteria":
      - 4> if the value of "report criteria" stored in the variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" is not "inter-RAT measurement reporting criteria"; or

- 4> if the value of "report criteria" stored in the variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" is "inter-RAT measurement reporting criteria" and if the IE "Parameters required for each event" is present:
  - 5> replace the IE "report criteria" (and all its children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IE "reporting criteria" received in the MEASUREMENT CONTROL message.
- 3> if "report criteria" is not set to "inter-RAT measurement reporting criteria":
  - 4> replace the IE "reporting criteria" (and all its children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IE "reporting criteria" received in the MEASUREMENT CONTROL message.
- 2> for measurement type "UE positioning measurement":
  - 3> if "reporting criteria" is set to "UE positioning reporting criteria":
    - 4> if the value of "reporting criteria" stored in the variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" is not "UE positioning reporting criteria", or;
    - 4> if the value of "reporting criteria" stored in the variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" is "UE positioning reporting criteria" and if the IE "Parameters required for each event" is present:
      - 5> replace the IE "reporting criteria" (and all its children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IE "report criteria" received in the MEASUREMENT CONTROL message.
  - 3> if "reporting criteria" is not set to "UE positioning reporting criteria":
    - 4> replace the IE "report criteria" (and all its children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IE "report criteria" received in the MEASUREMENT CONTROL message.
- 2> for measurement type "traffic volume measurement":
  - 3> replace the IE "report criteria" (and all its children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IE "report criteria" received in the MEASUREMENT CONTROL message.
- 2> for measurement type "quality measurement":
  - 3> replace the IE "report criteria" (and all its children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IE "report criteria" received in the MEASUREMENT CONTROL message;
  - 3> if "report criteria" is set to "quality measurement reporting criteria":
    - 4> if the value of "BLER reporting" in any instance of the IE "Quality reporting quantity" stored in the variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IE "report criteria" received in the MEASUREMENT CONTROL message is set to TRUE:
      - 5> the UE behaviour is unspecified.
- 2> for measurement type "UE internal measurement":
  - 3> if "report criteria" is set to "UE internal measurement reporting criteria":
    - 4> if the value of "report criteria" stored in the variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" is not "UE internal measurement reporting criteria"; or

- 4> if the value of "report criteria" stored in the variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" is "UE internal measurement reporting criteria" and if the IE "Parameters sent for each UE internal measurement event" is present:
  - 5> replace the IE "report criteria" (and all its children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IE "report criteria" received in the MEASUREMENT CONTROL message.
- 3> if "report criteria" is not set to "UE internal measurement reporting criteria":
  - 4> replace the IE "report criteria" (and all its children) stored in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IE "report criteria" received in the MEASUREMENT CONTROL message.
- 1> if the IE "measurement command" has the value "release":
  - 2> terminate the measurement associated with the identity given in the IE "measurement identity";
  - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT\_IDENTITY.
- 1> if the IE "DPCH Compressed Mode Status Info" is present:
  - 2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IEs "TGMP" and "Current TGPS Status Flag" in variable TGPS\_IDENTITY):
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
  - 2> if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
    - 3> the UE behaviour is unspecified.
  - 2> if there is a pending "activation time" for a reconfiguration procedure that included the IE "DPCH Compressed mode info":
    - 3> the UE behaviour is unspecified.
  - 2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS IDENTITY):
    - 3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
      - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;
      - 4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS\_IDENTITY to "inactive" at the frame indicated by IE "TGPS reconfiguration CFN" received in the message.
    - 3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
      - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.
- NOTE1: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.
- NOTE2: The deactivation of pattern sequences only occurs as a result of RRC messages received by the UE, i.e. the UE does not set the "Current TGPS Status Flag" to "inactive" after the final gap of a finite length pattern sequence.
  - 2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
    - 3> activate the pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and

- 3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS\_IDENTITY to "active"; and
- 3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
- 3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
  - 4> start the concerned pattern sequence immediately at that CFN.
- 2> not alter pattern sequences stored in variable TGPS\_IDENTITY, if the pattern sequence is not identitifed in IE "TGPSI" in the received message.
- 1> if the UE in CELL\_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT\_IDENTITY:
  - 2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT\_IDENTITY; and
  - 2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT\_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.
- 1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE\_CAPABILITY\_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS.

#### The UE may:

- 1> if the IE "Measurement command" has the value "setup":
  - 2> for measurement type "UE positioning measurement":
    - 3> if the UE is CELL\_FACH state:
      - 4> if IE "Positioning Method" is set to "GPS":
        - 5> if IE "UE positioning GPS assistance data" is not included and variable UE POSITIONING GPS DATA is empty:
          - 6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:
            - 7> read System Information Block types 15, 15.1, 15.2 and 15.3.
          - 6> act as specified in subclause 8.6.7.19.3.
        - 5> if IE "GANSS Positioning Methods" is present:
          - 6> for each GNSS indicated in IE "GANSS Positioning Methods" and supported by UE:
            - 7> if IE "UE positioning GANSS assistance data" is not included and variable UE\_POSITIONING\_GANSS\_DATA does not contain data for that GNSS:
              - 8> if System Information Block types 15bis, 15.1bis, 15.2bis, 15.3bis, 15.6, 15.7 and 15.8 are broadcast:
                - 9> read System Information Block types 15bis, 15.1bis, 15.2bis, 15.3bis, 15.6, 15.7 and 15.8.
              - 8> act as specified in subclause 8.6.7.19.6.

1> and the procedure ends.

## 8.4.1.4 Unsupported measurement in the UE

If UTRAN instructs the UE to perform a measurement that is not supported by the UE, or would cause the maximum number of reporting criteria supported by the UE [19] to be exceeded, the UE shall:

- 1> retain the measurement configuration that was valid before the MEASUREMENT CONTROL message was received;
- 1> set the IE "RRC transaction identifier" in the MEASUREMENT CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 1> clear that entry.
- 1> set the cause value in IE "failure cause" to "unsupported measurement";
- 1> submit the MEASUREMENT CONTROL FAILURE message to lower layers for transmission on the DCCH using AM RLC;
- 1> continue with any ongoing processes and procedures as if the invalid MEASUREMENT CONTROL message has not been received;
- 1> and the procedure ends.

## 8.4.1.4a Configuration Incomplete

If the variable CONFIGURATION\_INCOMPLETE is set to TRUE, the UE shall:

- 1> retain the measurement configuration that was valid before the MEASUREMENT CONTROL message was received;
- 1> set the IE "RRC transaction identifier" in the MEASUREMENT CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS and clear that entry;
- 1> clear the variable CONFIGURATION\_INCOMPLETE;
- 1> set the cause value in IE "failure cause" to "Configuration incomplete";
- 1> submit the MEASUREMENT CONTROL FAILURE message to lower layers for transmission on the DCCH using AM RLC;
- 1> continue with any ongoing processes and procedures as if the invalid MEASUREMENT CONTROL message has not been received;
- 1> and the procedure ends.

## 8.4.1.5 Invalid MEASUREMENT CONTROL message

If the MEASUREMENT CONTROL message contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> set the IE "RRC transaction identifier" in the MEASUREMENT CONTROL FAILURE message to the value of "RRC transaction identifier" in the entry for the MEASUREMENT CONTROL message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry.
- 1> set the IE "failure cause" to the cause value "protocol error";
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION;

- 1> submit the MEASUREMENT CONTROL FAILURE message to lower layers for transmission on the DCCH using AM RLC;
- 1> continue with any ongoing processes and procedures as if the invalid MEASUREMENT CONTROL message has not been received:
- 1> and the procedure ends.

# 8.4.1.6 Measurements after transition from CELL\_DCH to CELL\_FACH/CELL\_PCH/URA\_PCH state

The UE shall apply the following rules for different measurement types after transiting from CELL\_DCH to CELL\_FACH/CELL\_PCH/URA\_PCH state:

## 8.4.1.6.1 Intra-frequency measurement

Upon transition from CELL\_DCH to CELL\_FACH/CELL\_PCH/URA\_PCH state, the UE shall:

- 1> stop intra-frequency type measurement reporting;
- 1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE on the current frequency (in case the IE "Frequency info" is not received) or other than that indicated by this IE on the frequency indicated by the IE "Frequency info" (when the IE "Frequency info" is included); or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or
- 1> if the transition is not due to a reconfiguration message:
  - 2> delete the measurements of type intra-frequency associated with the variable MEASUREMENT\_IDENTITY.
- 1> begin monitoring cells listed in the IE "intra-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11).

#### 8.4.1.6.2 Inter-frequency measurement

Upon transition from CELL\_DCH to CELL\_FACH/ CELL\_PCH/URA\_PCH state, the UE shall:

- 1> stop the inter-frequency type measurement reporting assigned in a MEASUREMENT CONTROL message;
- 1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE on the current frequency (in case the IE "Frequency info" is not received) or other than that indicated by this IE on the frequency indicated by the IE "Frequency info" (when the IE "Frequency info" is included); or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or
- 1> if the transition is not due to a reconfiguration message:
  - 2> delete the measurements of type inter-frequency associated with the variable MEASUREMENT\_IDENTITY and delete the corresponding compressed mode pattern stored in the variable TGPS\_IDENTITY.
- 1> for remaining compressed mode patterns, set the IE "TGPS Status Flag" to "deactivate" and the IE "Current TGPS Status Flag" to "inactive" in the variable TGPS\_IDENTITY.
- 1> begin monitoring cells listed in the IE "inter-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11);
- 1> in CELL\_FACH state:
  - 2> perform measurements on other frequencies according to the IE "FACH measurement occasion info".

#### 8.4.1.6.3 Inter-RAT measurement

Upon transition from CELL\_DCH to CELL\_FACH/CELL\_PCH/URA\_PCH state, the UE shall:

- 1> stop the inter-RAT type measurement reporting assigned in a MEASUREMENT CONTROL message;
- 1> delete the measurements of type inter-RAT associated with the variable MEASUREMENT\_IDENTITY and delete the corresponding compressed mode pattern stored in the variable TGPS\_IDENTITY;
- 1> begin monitoring cells listed in the IE "inter-RAT cell info list" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11);
- 1> in CELL\_FACH state:
  - 2> perform measurements on other systems according to the IE "FACH measurement occasion info".

## 8.4.1.6.4 Quality measurement

Upon transition from CELL DCH to CELL FACH/CELL PCH/URA PCH state, the UE shall:

- 1> stop quality type measurement reporting;
- 1> delete all measurement control information of measurement type "quality" stored in the variable MEASUREMENT\_IDENTITY.

#### 8.4.1.6.5 UE internal measurement

Upon transition from CELL\_DCH to CELL\_FACH/CELL\_PCH/URA\_PCH state, the UE shall:

- 1> stop UE internal measurement type measurement reporting;
- 1> delete all measurement control information of measurement type "UE internal" stored in the variable MEASUREMENT\_IDENTITY.

#### 8.4.1.6.6 Traffic volume measurement

Upon transition from CELL\_DCH to CELL\_FACH or CELL\_PCH or URA\_PCH state, the UE shall:

- 1> retrieve each set of measurement control information of measurement type "traffic volume" stored in the variable MEASUREMENT\_IDENTITY; and
  - 2> if the optional IE "measurement validity" for this measurement has not been included:
    - 3> delete the measurement associated with the variable MEASUREMENT\_IDENTITY.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL\_DCH":
    - 3> stop measurement reporting;
    - 3> store the measurement associated with the variable MEASUREMENT\_IDENTITY to be used after the next transition to CELL\_DCH state.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states" or "all states except CELL\_DCH", and if the state transition is from CELL\_DCH to CELL\_PCH or URA\_PCH state:
    - 3> stop measurement reporting;
    - 3> store the measurement associated with the variable MEASUREMENT\_IDENTITY to be used after the next transition to CELL\_FACH state.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states", and if the state transition is from CELL\_DCH to CELL\_FACH state:
    - 3> continue measurement reporting.

- 2> if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL\_DCH", and if the state transition is from CELL\_DCH to CELL\_FACH state:
  - 3> resume this measurement and associated reporting.
- 1> if no traffic volume type measurement has been assigned to the UE with a MEASUREMENT CONTROL message that is valid in CELL\_FACH or CELL\_PCH or URA\_PCH states (stored in the variable MEASUREMENT\_IDENTITY), which has the same identity as the one indicated in the IE "Traffic volume measurement system information":
  - 2> store the measurement control information from the IE "Traffic volume measurement system information" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) in the variable MEASUREMENT\_IDENTITY;
  - 2> perform traffic volume measurement reporting according to the assigned information, when in CELL\_FACH state

#### 8.4.1.6.7 UE positioning measurement

Upon transition from CELL\_DCH to CELL\_FACH and upon transition from CELL\_DCH to CELL\_PCH or URA\_PCH for UE assisted GPS measurements, the UE shall:

- 1> retrieve each set of measurement control information of measurement type "UE positioning" stored in the variable MEASUREMENT\_IDENTITY; and
  - 2> if the optional IE "measurement validity" for this measurement has not been included:
    - 3> delete the measurement associated with the variable MEASUREMENT\_IDENTITY.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL\_DCH":
    - 3> stop measurement reporting;
    - 3> store the measurement associated with the variable MEASUREMENT\_IDENTITY to be used after the next transition to CELL\_DCH state.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":
    - 3> upon transition from CELL\_DCH to CELL\_PCH or URA\_PCH:
      - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning measurement" stored in the variable MEASUREMENT\_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval" included in this IE is less than 64 seconds:
        - 5>use a value of 64 seconds for the measurement interval associated with this measurement while the UE remains in CELL\_PCH/URA\_PCH.
      - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning measurement" stored in the variable MEASUREMENT\_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 64 seconds:
        - 5> use a value of 64 seconds for the reporting interval associated with this measurement while the UE remains in CELL\_PCH/URA\_PCH.
    - 3> continue measurement reporting according to its UE positioning measurement reporting capability.
  - 2> if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL\_DCH":
    - 3> upon transition from CELL\_DCH to CELL\_PCH or URA\_PCH:
      - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning measurement" stored in the variable MEASUREMENT\_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval" included in this IE is less than 64 seconds:

- 5> use a value of 64 seconds for the measurement interval associated with this measurement while the UE remains in CELL\_PCH/URA\_PCH.
- 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning measurement" stored in the variable MEASUREMENT\_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 64 seconds:
  - 5> use a value of 64 seconds for the reporting interval associated with this measurement while the UE remains in CELL\_PCH/URA\_PCH.
- 3> resume this measurement and associated reporting according to its UE Positioning measurement reporting capability.
- 1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or
- 1> if the transition is due to a reconfiguration message which included the IE "Frequency info", and the UE selects a cell on another frequency than that indicated by this IE; or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Frequency info", and the UE can not find a cell on the current frequency, but it selects a cell on another frequency; or
- 1> if the transition is not due to a reconfiguration message:
  - 2> delete the assistance data included in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED and UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED.
- 1> if the IE "Positioning Methods" stored in the variable MEASUREMENT\_IDENTITY is set to "OTDOA" or "OTDOA or GPS":
  - 2> if the IE "Method type" stored in the variable MEASUREMENT\_IDENTITY is set to "UE-based" or "UE assisted preferred but UE-based allowed" or "UE-based preferred but UE-assisted allowed":
    - 3> begin monitoring assistance data received in System Information Block type 15.4 and System Information Block type 15.5 according to subclause 8.1.1.6.15.
  - 2> if the IE "Method type" stored in the variable MEASUREMENT\_IDENTITY is set to "UE-assisted":
    - 3> begin monitoring assistance data received in System Information Block type 15.4 according to subclause 8.1.1.6.15.
- 1> if the UE is in CELL\_FACH state:
  - 2> if the IE "UE positioning OTDOA neighbour cell list for UE assisted" stored in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED or UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED contains neighbour cells on other frequencies than the current frequency:
    - 3> perform measurements on other frequencies according to the IE "FACH measurement occasion info".

#### The UE may:

- 1> if the IE "Positioning Methods" stored in the variable MEASUREMENT\_IDENTITY is set to "GPS" or "OTDOA or GPS":
  - 2> begin monitoring assistance data received in System Information Block type 15 and/or System Information Block type 15.1 and/or System Information Block type 15.2 and/or System Information Block type 15.3 according to subclause 8.1.1.6.15.
  - 2> if the IE "GANSS Positioning Methods" is present:
    - 3> begin monitoring assistance data received in System Information Block type 15bis and/or System Information Block type 15.1bis and/or System Information Block type 15.2bis and/or System Information

Block type 15.3bis and/or System Information Block type 15.6 and/or System Information Block type 15.7 and/or System Information Block type 15.8 according to subclause 8.1.1.6.15.

NOTE: In the case that the measurement or reporting intervals are modified to 64 seconds during a transition to CELL\_PCH/URA\_PCH as described above, the UE retains the previously used values of "Measurement interval" and "Reporting interval" for use after transition out of CELL\_PCH/URA\_PCH.

## 8.4.1.6a Actions in CELL\_FACH/CELL\_PCH/URA/PCH state upon cell re-selection

Upon cell reselection while in CELL\_FACH/CELL\_PCH/URA/PCH state and the cell reselection has occurred after the measurement control information was stored, the UE shall:

- 1> delete all measurements of type intra-frequency, inter-frequency, and inter-RAT associated with the variable MEASUREMENT\_IDENTITY;
- 1> delete all compressed mode patterns associated with inter-frequency and inter-RAT measurements stored in the variable TGPS\_IDENTITY;
- 1> delete the traffic volume measurements that have not been set up or modified through a MEASUREMENT CONTROL message.

## 8.4.1.7 Measurements after transition from CELL\_FACH to CELL\_DCH state

The UE shall apply the following rules for different measurement types after transiting from CELL\_FACH to CELL\_DCH state:

## 8.4.1.7.1 Intra-frequency measurement

Upon transition from CELL\_FACH to CELL\_DCH state:

- 1> if intra-frequency measurements applicable to CELL\_DCH state are stored in the variable MEASUREMENT\_IDENTITY:
  - 2> if the cell in which the UE transited from CELL\_FACH state is included in the active set for the CELL\_DCH state, the UE shall:
    - 3> resume the measurement reporting.
  - 2> otherwise, the UE shall:
    - 3> not resume the measurement reporting. The measurement shall be restarted when a MEASUREMENT CONTROL message is received with the corresponding measurement identity.

#### 8.4.1.7.2 Inter-frequency measurement

Upon transition from CELL\_FACH to CELL\_DCH state:

- 1> if inter-frequency measurements applicable to CELL\_DCH state are stored in the variable MEASUREMENT\_IDENTITY:
  - 2> if the cell in which the UE transited from CELL\_FACH state is included in the active set for the CELL\_DCH state, the UE shall:
    - 3> resume the measurement reporting.
  - 2> otherwise, the UE shall:
    - 3> not resume the measurement reporting. The measurement shall be restarted when a MEASUREMENT CONTROL message is received with the corresponding measurement identity.

#### 8.4.1.7.3 Inter-RAT measurement

Upon transition from CELL\_FACH to CELL\_DCH state, the UE shall:

1> stop monitoring the list of cells assigned in the IE "inter-RAT cell info list" in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11).

#### 8.4.1.7.4 Traffic volume measurement

Upon transition from CELL\_FACH to CELL\_DCH state, the UE shall:

- 1> retrieve each set of measurement control information of measurement type "traffic volume" stored in the variable MEASUREMENT\_IDENTITY;
  - 2> if the optional IE "measurement validity" for this measurement has not been included:
    - 3> delete the measurement associated with the variable MEASUREMENT\_IDENTITY.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states except CELL DCH":
    - 3> stop measurement reporting; and
    - 3> save the measurement associated with the variable MEASUREMENT\_IDENTITY to be used after the next transition to CELL\_FACH/CELL\_PCH/URA\_PCH state.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":
    - 3> continue measurement reporting.
  - 2> if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "CELL\_DCH":
    - 3> resume this measurement and associated reporting.
- 1> if no traffic volume type measurement has been assigned to the UE with a MEASUREMENT CONTROL message that is valid in CELL\_DCH and has the same identity as the one indicated in the IE "Traffic volume measurement system information":
  - 2> store the measurement control information from the IE "Traffic volume measurement system information" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) in the variable MEASUREMENT\_IDENTITY;
  - 2> begin traffic volume measurement reporting according to the assigned information.

#### 8.4.1.7.5 UE positioning measurement

Upon transition from CELL\_FACH to CELL\_DCH state, the UE shall:

- 1> retrieve each set of measurement control information of measurement type "UE positioning" stored in the variable MEASUREMENT IDENTITY; and
  - 2> if the optional IE "Measurement validity" for this measurement has not been included:
    - 3> delete the measurement associated with the variable MEASUREMENT\_IDENTITY.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states except CELL\_DCH":
    - 3> stop measurement reporting; and
    - 3> save the measurement associated with the variable MEASUREMENT\_IDENTITY to be used after the next transition to CELL\_FACH/CELL\_PCH/URA\_PCH state.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":
    - 3> continue measurement reporting.

- 2> if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "CELL DCH":
  - 3> resume this measurement and associated reporting.
- 1> stop monitoring assistance data received in System Information Block type 15 or System Information Block type 15.1 or System Information Block type 15.2 or System Information Block type 15.3 or System Information Block type 15.4 or System Information Block 15.5 or System Information Block type 15bis or System Information Block type 15.1bis or System Information Block type 15.2bis or System Information Block type 15.3bis or System Information Block type 15.6 or System Information Block type 15.7 or System Information Block type 15.8.

## 8.4.1.8 Measurements after transition from idle mode to CELL\_DCH state

The UE shall obey the following rules for different measurement types after transiting from idle mode to CELL\_DCH state:

## 8.4.1.8.1 Intra-frequency measurement

Upon transition from idle mode to CELL\_DCH state:

- 1> if intra-frequency measurements applicable to CELL\_DCH state are stored in the variable MEASUREMENT IDENTITY:
  - 2> if the cell in which the UE transited from idle mode is included in the active set for the CELL\_DCH state, the UE shall:
    - 3> begin measurement reporting.
  - 2> otherwise, the UE shall:
    - 3> not begin the measurement reporting. The measurement shall be restarted when a MEASUREMENT CONTROL message is received with the corresponding measurement identity.

## 8.4.1.8.2 Inter-frequency measurement

Upon transition from idle mode to CELL\_DCH state, the UE shall:

1> stop monitoring the list of cells assigned in the IE "inter-frequency cell info list" in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11).

#### 8.4.1.8.3 Inter-RAT measurement

Upon transition from idle mode to CELL\_DCH state, the UE shall:

1> stop monitoring the list of cells assigned in the IE "inter-RAT cell info list" in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11).

#### 8.4.1.8.4 Traffic volume measurement

Upon transition from idle mode to CELL\_DCH state, the UE shall:

1> begin a traffic volume type measurement, assigned in System Information Block type 11 (or System Information Block type 12, according to subclause 8.1.1.6.11).

## 8.4.1.8.5 UE positioning measurement

Upon transition from idle mode to CELL\_DCH state, the UE shall:

1> stop monitoring assistance data received in System Information Block type 15 or System Information Block type 15.1 or System Information Block type 15.2 or System Information Block type 15.3 or System Information Block type 15.4 or System Information Block type 15.5 or System Information Block type 15bis or System Information Block type 15.1bis or System Information Block type 15.2bis or System Information Block type

15.3bis or System Information Block type 15.6 or System Information Block type 15.7 or System Information Block type 15.8.

## 8.4.1.9 Measurements after transition from idle mode to CELL FACH state

The UE shall obey the follow rules for different measurement types after transiting from idle mode to CELL\_FACH state:

#### 8.4.1.9.1 Intra-frequency measurement

Upon transition from idle mode to CELL FACH state, the UE shall:

1> begin or continue monitoring cells listed in the IE "intra-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11).

## 8.4.1.9.2 Inter-frequency measurement

Upon transition from idle mode to CELL\_FACH state, the UE shall:

- 1> begin or continue monitoring cells listed in the IE "inter-frequency cell info list" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11);
- 1> perform measurements on other frequencies according to the IE "FACH measurement occasion info".

#### 8.4.1.9.3 Inter-RAT measurement

Upon transition from idle mode to CELL\_FACH state, the UE shall:

- 1> begin or continue monitoring cells listed in the IE "inter-RAT cell info list" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11);
- 1> perform measurements on other systems according to the IE "FACH measurement occasion info".

#### 8.4.1.9.4 Traffic volume measurement

Upon transition from idle mode to CELL\_FACH state, the UE shall:

- 1> store the measurement control information from the IE "Traffic volume measurement system information" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) in the variable MEASUREMENT\_IDENTITY;
- 1> begin traffic volume measurement reporting according to the assigned information.

#### 8.4.1.9.5 UE positioning measurement

Upon transition from idle mode to CELL\_FACH state, the UE may:

- 1> begin or continue monitoring assistance data received in System Information Block type 15 or System Information Block type 15.1 or System Information Block type 15.2 or System Information Block type 15.3 or System Information Block type 15.4 or System Information Block type 15.5 or System Information Block type 15bis or System Information Block type 15.1bis or System Information Block type 15.2bis or System Information Block type 15.6 or System Information Block type 15.7 or System Information Block type 15.8 according to subclause 8.1.1.6.15;
- 1> if the IE "UE positioning OTDOA neighbour cell list for UE assisted" stored in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED; or
- 1> if the IE "UE positioning OTDOA neighbour cell list for UE based" stored in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED contains neighbour cells on other frequencies than the current frequency:
  - 2> perform measurements on other frequencies according to the IE "FACH measurement occasion info".

#### 8.4.1.9a Measurements after transition from connected mode to idle mode

Upon transition from connected mode to idle mode the UE shall:

- 1> stop measurement reporting for all measurements stored in the variable MEASUREMENT\_IDENTITY;
- 1> clear the variable MEASUREMENT\_IDENTITY;
- 1> apply the following rules for different measurement types.

#### 8.4.1.9a.1 Intra-frequency measurement

Upon transition from connected mode to idle mode, the UE shall:

- 1> stop monitoring intra-frequency cells listed in the IE "intra-frequency cell info list" received in System Information Block type 12 (if System Information Block type 12 is transmitted in the cell, according to subclause 8.1.1.6.11);
- 1> begin monitoring intra-frequency cells listed in the IE "intra-frequency cell info list" received in System Information Block type 11.

## 8.4.1.9a.2 Inter-frequency measurement

Upon transition from connected mode to idle mode, the UE shall:

- 1> stop monitoring inter-frequency cells listed in the IE "inter-frequency cell info list" received in System Information Block type 12 (if System Information Block type 12 is transmitted in the cell, according to subclause 8.1.1.6.11);
- 1> begin monitoring inter-frequency cells listed in the IE "inter-frequency cell info list" received in System Information Block type 11.

#### 8.4.1.9a.3 Inter-RAT measurement

Upon transition from connected mode to idle mode, the UE shall:

- 1> stop monitoring inter-RAT cells listed in the IE "inter-RAT cell info list" received in System Information Block type 12 (if System Information Block type 12 is transmitted in the cell, according to 8.1.1.6.11);
- 1> begin monitoring inter-RAT cells listed in the IE "inter-RAT cell info list" received in System Information Block type 11.

## 8.4.1.9a.4 UE positioning measurement

Upon transition from connected mode to idle mode, the UE may:

1> begin or continue monitoring assistance data received in System Information Block type 15 or System Information Block type 15.1 or System Information Block type 15.2 or System Information Block type 15.3 or System Information Block type 15.4 or System Information Block type 15.5 or System Information Block type 15bis or System Information Block type 15.1bis or System Information Block type 15.2bis or System Information Block type 15.3 or System Information Block type 15.7 or System Information Block type 15.8.

## 8.4.1.9b Measurements after transition from CELL\_FACH to CELL\_PCH/URA\_PCH

#### 8.4.1.9b.1 Traffic volume measurement

Upon transition from CELL\_FACH to CELL\_PCH or URA\_PCH, the UE shall:

- 1> stop any ongoing traffic volume measurement, and associated traffic volume measurement reporting.
- 1> store the measurement associated with the variable MEASUREMENT\_IDENTITY to be used after the next transition to CELL\_FACH state;

- 1> if no traffic volume type measurement has been assigned to the UE with a MEASUREMENT CONTROL message that is valid in CELL\_FACH or CELL\_PCH or URA\_PCH states (stored in the variable MEASUREMENT\_IDENTITY), which has the same identity as the one indicated in the IE "Traffic volume measurement system information":
  - 2> store the measurement control information from the IE "Traffic volume measurement system information" received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) in the variable MEASUREMENT\_IDENTITY.

#### 8.4.1.9b.2 UE positioning measurement

Upon transition from CELL\_FACH to CELL\_PCH or URA\_PCH, the UE shall:

- 1> retrieve each set of measurement control information of measurement type "UE positioning" stored in the variable MEASUREMENT\_IDENTITY; and
  - 2> if the optional IE "measurement validity" for this measurement has not been included:
    - 3> delete the measurement associated with the variable MEASUREMENT IDENTITY.
  - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states" or "all states except CELL\_DCH":
    - 3> if the choice in the IE "Reporting Criteria" included in the IE "UE Positioning measurement" stored in the variable MEASUREMENT\_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval" included in this IE is less than 64 seconds:
      - 4> use a value of 64 seconds for the measurement interval associated with this measurement while the UE remains in CELL\_PCH/URA\_PCH.
    - 3> if the choice in the IE "Reporting Criteria" included in the IE "UE Positioning measurement" stored in the variable MEASUREMENT\_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 64 seconds:
      - 4> use a value of 64 seconds for the reporting interval associated with this measurement while the UE remains in CELL\_PCH/URA\_PCH.
- NOTE: In the case that the measurement or reporting intervals are modified to 64 seconds as described above, the UE retains the previously used values of "Measurement interval" and "Reporting interval" for use after transition out of CELL\_PCH/URA\_PCH.

## 8.4.1.9c Measurements after transition from CELL\_PCH/URA\_PCH to CELL\_FACH

#### 8.4.1.9c.1 Traffic volume measurement

Upon transition from CELL\_PCH or URA\_PCH to CELL\_FACH, the UE shall resume any traffic volume measurement stored in the variable MEASUREMENT\_IDENTITY with measurement validity "all states" or "all states except CELL\_DCH", and start the associated traffic volume measurement reporting.

#### 8.4.1.9c.2 UE positioning measurement

Upon transition from CELL\_PCH or URA\_PCH to CELL\_FACH, the UE shall continue any UE positioning measurement stored in the variable MEASUREMENT\_IDENTITY with measurement validity "all states" or "all states except CELL\_DCH", and continue the associated UE positioning measurement reporting.

NOTE: The UE's values of "Measurement interval" in the IE "UE positioning reporting criteria" and "Reporting interval" in the IE "Periodical Reporting Criteria" after this state transition revert to the values stored during the transition to CELL\_PCH/URA\_PCH (i.e., the 64-second interval specified in subclause 8.4.1.9b.2 is not retained).

## 8.4.1.10 Changes in measurement objects

#### 8.4.1.10.1 Traffic volume measurement

When performing traffic volume event evaluation or reporting related to a certain transport channel, the UE shall consider all RBs which are mapped to the concerning transport channel e.g. if an additional RB is established on a transport channel used for event triggering or reporting, the new RB shall be taken into account.

NOTE: In this subclause, an "existing" uplink transport channel refers to a configured uplink transport channel applicable in the current RRC state.

#### The UE shall:

- 1> if the IE "Traffic volume measurement object" is included for this measurement:
  - 2> while a transport channel that is referenced in the IE "Traffic volume measurement object" does not exist:
    - 3> not perform any reporting related to this transport channel.

#### 1> else:

2> report on all existing uplink transport channels; e.g. if an additional transport channel is established while the measurement is ongoing, this new transport channel shall be taken into account in the traffic volume measurement reporting.

For every traffic volume event, the UE shall:

- 1> if the IE "Uplink transport channel type" is not included in the IE "Traffic volume measurement reporting criteria", or the "Uplink transport channel type" has the value "DCH" or "USCH" and the IE "UL transport channel id" is not included in the IE "Traffic volume measurement reporting criteria":
  - 2> if the IE "Traffic volume measurement object" is not included:
    - 3> take all existing UL transport channels into account for event triggering; e.g. if an additional transport channel is established while the measurement is ongoing, this new transport channel shall be taken into account in the traffic volume event triggering.

## 2> else:

- 3> while a transport channel that is referenced in the IE "Traffic Volume Measurement object" does not exist:
  - 4> not take this transport channel identity into account in the traffic volume measurement triggering.

#### 1> else:

- 2> while a transport channel that is referenced in the IE "Traffic Volume Measurement Reporting Criteria" does not exist:
  - 3> not take this transport channel identity into account in the traffic volume event triggering.

#### 8.4.1.10.2 Quality measurement

While a transport channel that is explicitly referenced with a transport channel identity in the IE "Quality Reporting Quantity" does not exist, the UE shall:

1> not perform any reporting related to this transport channel identity.

If the IE "Quality Reporting Quantity" does not contain any explicit transport channel identities, the UE shall:

- 1> report the quality of all existing downlink dedicated transport channels;
- 1> if an additional transport channel is established while the measurement is ongoing:
  - 2> take into account this new transport channel in the quality measurement reporting.

While a transport channel that is explicitly referenced with a transport channel id in the IE "Quality Measurement Reporting Criteria" does not exist, the UE shall:

1> not take this transport channel identity into account in the quality measurement event triggering.

## 8.4.1.10.3 Intra-frequency, Inter-frequency and Inter-RAT measurements

For measurements which include the IE "Cells for measurement" the UE shall:

- 1> while an IE "Intra-frequency cell id" or IE "Inter-frequency cell id" or IE "Inter-RAT cell id" in the IE "Cells for measurement" points to a position in the variable CELL\_INFO\_LIST which is marked as "vacant":
  - 2> not take this position into account for event triggering and reporting.

## 8.4.2 Measurement report



Figure 8.4.2-1: Measurement report, normal case

#### 8.4.2.1 General

The purpose of the measurement reporting procedure is to transfer measurement results from the UE to UTRAN.

#### 8.4.2.2 Initiation

In CELL DCH state, the UE shall:

1> transmit a MEASUREMENT REPORT message on the uplink DCCH when the reporting criteria stored in variable MEASUREMENT\_IDENTITY are met for any ongoing measurements that are being performed in the UE.

In CELL\_FACH state, the UE shall:

1> transmit a MEASUREMENT REPORT message on the uplink DCCH when the reporting criteria stored in variable MEASUREMENT\_IDENTITY are met for any ongoing traffic volume measurement or UE positioning measurement that is being performed in the UE.

In TDD, if the Radio Bearer associated with the MEASUREMENT\_IDENTITY fulfilling the reporting criteria for an ongoing traffic volume measurement is mapped on transport channel of type USCH, the UE shall:

1> initiate the "PUSCH CAPACITY REQUEST" procedure instead of transmitting a MEASUREMENT REPORT (TDD Only).

In CELL\_PCH or URA\_PCH state, the UE shall:

- 1> if the measurement reporting is not initiated according to subclause 8.5.40:
  - 2> first perform the cell update procedure according to subclause 8.3.1, using the cause "uplink data transmission", in order to transit to CELL\_FACH state; and then
  - 2> transmit a MEASUREMENT REPORT message on the uplink DCCH when the reporting criteria stored in variable MEASUREMENT\_IDENTITY are fulfilled for any ongoing UE positioning measurement which is being performed in the UE.

For FDD, the UE in CELL\_PCH state shall:

- 1> if variable H\_RNTI is set:
  - 2> if the measurement reporting is initiated according to subclause 8.5.40:
    - 3> set the IE "measurement identity" to "16";
    - 3> not set the IE "measured results";
    - 3> include the IE "measured results on RACH";
    - 3> if an event triggered traffic volume measurement has been configured:
      - 4> if the TCTV is larger than the threshold in the IE "Reporting threshold" for a traffic volume measurement stored in the MEASUREMENT\_IDENTITY variable and that traffic volume measurement has "measurement identity" equal to 4, "Traffic volume event identity" equal to "4a", "Measurement validity" equal to "all states" or "all states except CELL\_DCH":
        - 5> set the IE "Traffic volume event identity" to "4a".
    - 3> and then transmit the MEASUREMENT REPORT message on the uplink DCCH using AM RLC; when the MEASUREMENT REPORT message has been submitted to lower layers for transmission the procedure ends.

The reporting criteria are fulfilled if either:

- a periodic MEASUREMENT REPORT message shall be sent according to the IE "Periodical Reporting Criteria"; or
- an event in stored IE "Measurement reporting criteria" was triggered. Events and triggering of reports for different measurement types are described in detail in clause 14.

For the measurement, which triggered the MEASUREMENT REPORT message, the UE shall:

- 1> set the IE "measurement identity" to the measurement identity, which is associated with that measurement in variable MEASUREMENT\_IDENTITY;
- 1> set the IE "measured results" to include measurements according to the IE "reporting quantity" of that measurement stored in variable MEASUREMENT\_IDENTITY; and
  - 2> if all the reporting quantities are set to FALSE:
    - 3> not set the IE "measured results".
- 1> set the IE "Measured results" in the IE "Additional measured results" according to the IE "reporting quantity" for all measurements associated with the measurement identities included in the "Additional measurements list" stored in variable MEASUREMENT\_IDENTITY of the measurement that triggered the measurement report; and
  - 2> if one or more additional measured results are to be included:
    - 3> include only the available additional measured results, and sort them in ascending order according to their IE "measurement identity" in the MEASUREMENT REPORT message.
- 1> if the MEASUREMENT REPORT message was triggered by an event (i.e. not a periodical report):
  - 2> set the IE "Event results" according to the event that triggered the report.
- 1> if the IE Inter-RAT measured results list or the IE Inter-RAT measurement event results is included in the measurement report:
  - 2> if the indication status of the IE "Inter-RAT cell info indication" in the variable CELL\_INFO\_LIST is marked "present", include the stored value of the IE "Inter-RAT cell info indication" in the MEASUREMENT REPORT message.

The UE shall:

1> transmit the MEASUREMENT REPORT message on the uplink DCCH using either AM or UM RLC according to the stored IE "measurement reporting mode" associated with the measurement identity that triggered the report.

When the MEASUREMENT REPORT message has been submitted to lower layers for transmission:

1> the procedure ends.

# 8.4.3 Assistance Data Delivery



Figure 8.4.3-1 Assistance Data Delivery

#### 8.4.3.1 General

The purpose of the assistance data delivery procedure is to transfer UE positioning related assistance data from the UTRAN to the UE.

## 8.4.3.2 Initiation

When requested by the Core Network, the UTRAN may deliver UE positioning related assistance data with a ASSISTANCE DATA DELIVERY message, which is transmitted on the downlink DCCH using AM RLC

## 8.4.3.3 Reception of ASSISTANCE DATA DELIVERY message by the UE

Upon reception of a ASSISTANCE DATA DELIVERY message the UE shall:

- 1> if IE "UE positioning OTDOA assistance data for UE-based" is included:
  - 2> act as specified in subclause 8.6.7.19.2a.
- 1> if IE "UE positioning GPS assistance data" is included:
  - 2> act as specified in subclause 8.6.7.19.3.
- 1> if IE "UE positioning GANSS assistance data" is included:
  - 2> act as specified in subclause 8.6.7.19.6.

## 8.4.3.4 Invalid ASSISTANCE DATA DELIVERY message

If the UE receives a ASSISTANCE DATA DELIVERY message, which contains a protocol error causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE according to clause 9, the UE shall perform procedure specific error handling as follows. The UE shall:

- 1> transmit an RRC STATUS message on the uplink DCCH using AM RLC;
- 1> include the IE "Identification of received message"; and
- 1> set the IE "Received message type" to ASSISTANCE DATA DELIVERY; and

- 1> set the IE "RRC transaction identifier" to the value of "RRC transaction identifier" in the entry for the ASSISTANCE DATA DELIVERY message in the table "Rejected transactions" in the variable TRANSACTIONS; and
- 1> clear that entry;
- 1> include the IE "Protocol error information" with contents set to the value of the variable PROTOCOL\_ERROR\_INFORMATION.
- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid ASSISTANCE DATA DELIVERY message has not been received.

# 8.5 General procedures

## 8.5.1 Selection of initial UE identity

The purpose of the IE "Initial UE identity" is to provide a unique UE identification at the establishment of an RRC connection. The type of identity shall be selected by the UE according to the following.

If the UE is operating in "GSM-MAP mode", the UE shall choose "UE id type" in the IE "Initial UE identity" with the following priority:

- 1. TMSI (GSM-MAP): The TMSI (GSM-MAP) shall be chosen if available. The IE "LAI" in the IE "Initial UE identity" shall also be present when TMSI (GSM-MAP) is used, for making it unique.
- 2. P-TMSI (GSM-MAP): The P-TMSI (GSM-MAP) shall be chosen if available and no TMSI (GSM-MAP) is available. The IE "RAI" in the IE "Initial UE identity" shall in this case also be present when P-TMSI (GSM-MAP) is used, for making it unique.
- 3. IMSI (GSM-MAP): The IMSI (GSM-MAP) shall be chosen if available and no TMSI (GSM-MAP) or P-TMSI is available.
- 4. IMEI: The IMEI shall be chosen when none of the above three conditions are fulfilled.

When being used, the IEs "TMSI (GSM-MAP)," "P-TMSI (GSM-MAP)", "IMSI (GSM-MAP)", "LAI" and "RAI" shall be set equal to the values of the corresponding identities stored in the USIM or SIM.

If the UE is operating in "ANSI-41 mode", the UE shall choose "UE id type" in the IE "Initial UE identity" according to the procedure specified in the 3GPP2 document "3GPP2 C.P0004-A".

# 8.5.2 Actions when entering idle mode from connected mode

When entering idle mode from connected mode, the UE shall:

- 1> clear or set variables upon leaving UTRA RRC connected mode as specified in subclause 13.4;
- 1> if the RRC CONNECTION RELEASE message was received and the IE "Redirection info" was present therein:
  - 2> attempt to camp on a suitable cell on the indicated UTRA carrier included in the RRC CONNECTION RELEASE message;
  - 2> attempt to camp on a suitable cell of the list of cells for the indicated RAT included in the RRC CONNECTION RELEASE message. If no cells were indicated for that RAT or no suitable cell of the indicated cells for that RAT is found within 10s, attempt to camp on any suitable cell of that RAT; or
  - 2> if no suitable cell is found on the indicated UTRA carrier or RAT camp on any suitable cell.
- 1> attempt to select a suitable cell to camp on.

When leaving connected mode according to [4], the UE shall:

1> perform cell selection.

While camping on a cell, the UE shall:

- 1> acquire system information according to the system information procedure in subclause 8.1;
- 1> perform measurements according to the measurement control procedure specified in subclause 8.4; and
- 1> if the UE is registered:
  - 2> be prepared to receive paging messages according to the paging procedure in subclause 8.2.

If the UE is operating in "GSM-MAP mode", the UE shall:

- 1> delete any NAS system information received in connected mode;
- 1> acquire the NAS system information in system information block type 1; and
- 1> proceed according to subclause 8.6.1.2.

When entering idle mode, the UE shall:

- 1> if the USIM is present, for each CN domain:
  - 2> if a new security key set was received for this CN domain but was not used either for integrity protection or ciphering during this RRC connection:
    - 3> set the START value for this domain to zero; and
    - 3> store this START value for this domain in the USIM.
  - 2> else:
    - 3> if the current "START" value, according to subclause 8.5.9 for a CN domain, is greater than or equal to the value "THRESHOLD" of the variable START\_THRESHOLD:
      - 4> delete the ciphering and integrity keys that are stored in the USIM for that CN domain;
      - 4> inform the deletion of these keys to upper layers.
    - 3> else:
      - 4> store the current "START" value for this CN domain on the USIM.
- NOTE: Prior to storing the "START" value, the UE should calculate this "START" value according to subclause 8.5.9.

1> else:

- 2> if the SIM is present, for each CN domain:
  - 3> if a new security key set was received for this CN domain but was not used either for integrity protection or ciphering during this RRC connection:
    - 4> set the START value for this domain to zero; and
    - 4> store this START value for this domain in the UE
  - 3> else:
    - 4> if the current "START" value, according to subclause 8.5.9 for this CN domain, is greater than or equal to the value "THRESHOLD" of the variable START\_THRESHOLD:
      - 5> delete the Kc key for this CN domain;
      - 5> delete the ciphering and integrity keys that are stored in the UE for that CN domain;
      - 5> set the "START" values for this CN domain to zero and store it the UE;
      - 5> inform the deletion of the key to upper layers.

4> else:

5> store the current "START" value for this CN domain in the UE.

NOTE: Prior to storing the "START" value, the UE should calculate this "START" value according to subclause 8.5.9.

# 8.5.3 Open loop power control upon establishment of DPCCH

This procedure is used in FDD mode only.

When establishing the first DPCCH the UE shall start the UL inner loop power control at a power level according to:

1> DPCCH\_Initial\_power = DPCCH\_Power\_offset - CPICH\_RSCP

Where

DPCCH\_Power\_offset shall have the value of IE "DPCCH Power offset" in IE "Uplink DPCH power control info"

The value for the CPICH\_RSCP shall be measured by the UE.

## 8.5.4 Physical channel establishment criteria

When a physical dedicated channel establishment is initiated by the UE, the UE shall start a timer T312 and wait for layer 1 to indicate N312 "in sync" indications. On receiving N312 "in sync" indications, the physical channel is considered established and the timer T312 is stopped and reset.

If the timer T312 expires before the physical channel is established, the UE shall consider this as a "physical channel failure".

NOTE: The criteria defined in this subclause only apply in case the UE performs synchronisation procedure A (FDD only).

## 8.5.5 Actions in "out of service area" and "in service area"

This subclause specifies the general actions the UE shall perform when it detects "out of service" or "in service" area. The specific UE behaviour when it detects "out of service" or "in service area" and periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" is specified in subclause 8.3.1.

#### 8.5.5.1 Detection of "out of service" area

The UE shall detect "out of service" area as defined in [19].

# 8.5.5.1.1 Actions following detection of "out of service" area in URA\_PCH or CELL\_PCH state

If the UE detects the "out of service area" and the UE is in URA\_PCH or CELL\_PCH state it shall perform the following actions:

1> start timer T316;

1> perform processes described in subclause 7.2.2.

## 8.5.5.1.2 Actions following detection of "out of service" area in CELL\_FACH state

If the UE detects the "out of service area" and the UE is in CELL\_FACH state it shall perform the following actions. The UE shall:

1> start timer T317 if not already running;

1> perform processes described in subclause 7.2.2.

# 8.5.5.1.3 Actions following detection of "out of service" area on transition from CELL\_DCH to URA\_PCH or CELL\_PCH

If the UE detects the "out of service area" on transition from CELL\_DCH to URA\_PCH or CELL\_PCH, it shall perform the following actions:

- 1> start timer T316;
- 1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";
- 1> perform processes described in subclause 7.2.2.

# 8.5.5.1.4 Actions following detection of "out of service" area on transition from CELL\_DCH to CELL\_FACH

If the UE detects the "out of service area" on transition from CELL\_DCH to CELL\_FACH, it shall perform the following actions:

- 1> if the transition is triggered by a reconfiguration procedure:
  - 2> start timer T317;
  - 2> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";
  - 2> perform processes described in subclause 7.2.2.
- 1> otherwise:
  - 2> perform processes described in subclause 7.2.2.

#### 8.5.5.2 Detection of "in service" area

When a suitable cell is found based on the description in [4], the UE considers it as having detected "in service area".

# 8.5.5.2.1 Actions following Re-entry into "in service area" in URA\_PCH or CELL\_PCH state

If the UE re-enters "in service area" before T316 expiry the UE shall perform the following actions. The UE shall:

- 1> stop T316;
- 1> if T307 is active:
  - 2> stop T307.
- 1> if the UE is in CELL\_PCH state and the UE is camped on a cell different from the one where service was lost:
  - 2> for FDD:
    - 3> clear the variable C\_RNTI and H\_RNTI;
    - 3> stop using that C-RNTI and H-RNTI just cleared from variables C\_RNTI and H\_RNTI in MAC.
  - 2> initiate the cell update procedure using the cause "cell-reselection" as specified in subclause 8.3.1.
- 1> perform processes described in subclause 7.2.2.

## 8.5.5.2.2 Actions following re-entry into "in service area" in CELL\_FACH state

If the UE detects "in service area" before T317 expiry the UE shall perform the following actions. If no cell update procedure or URA update procedure is ongoing, the UE shall:

- 1> stop T317;
- 1> if T307 is active:
  - 2> stop T307.
- 1> initiate the cell update procedure using as cause "Re-entering service area" as specified in subclause 8.3.1;
- 1> perform processes described in subclause 7.2.2.

If a cell update procedure or URA update procedure is ongoing, the UE shall:

- 1> stop T317;
- 1> perform the actions as specified in 8.3.1.

## 8.5.5.3 T316 expiry

On T316 expiry the UE shall perform the following actions. The UE shall:

- 1> if "out of service area" is detected:
  - 2> start timer T317;
  - 2> move to CELL\_FACH state;
  - 2> perform processes described in subclause 7.2.2.
- 1> if "in service area" is detected:
  - 2> initiate the cell update procedure using as cause "Re-entering service area" as specified in subclause 8.3.1;
  - 2> perform processes described in subclause 7.2.2.

## 8.5.5.4 T317 expiry

T317 shall never expire, i.e. all its values shall be assumed to be "infinity".

If T317 is running:

1> the UE behaviour shall be as specified in subclause 7.2.2.2.

# 8.5.6 Radio link failure criteria and actions upon radio link failure

In CELL\_DCH State, after receiving N313 consecutive "out of sync" indications from layer 1 for the established DPCCH or F-DPCH physical channel in FDD, and the physical channels associated with mapped DCCHs in TDD, the UE shall:

- 1> start timer T313;
- 1> upon receiving N315 successive "in sync" indications from layer 1 and upon change of UE state:
  - 2> stop and reset timer T313.
- 1> if T313 expires:
  - 2> consider it as a "Radio link failure".

Periods in time where neither "in sync" nor "out of sync" is reported by layer 1 do not affect the evaluation of the number of consecutive (resp. successive) "in sync" or "out of sync" indications.

For 1.28 Mcps TDD, when the variable E\_DCH\_TRANSMISSION is set to TRUE (see subclause 8.5.28) and the UE has stored the IE "E-RUCCH info", a "Radio link failure" shall be triggered as below:

- 1> if the E-RUCCH transmission counter is added greater than N\_RUCCH, another hysteresis Timer with the value of N-RUCCH times of T-RUCCH period shall be started:
  - 2> upon the hysteresis Timer expires and still no Grant has been received for the whole time duration since the last E-RUCCH transmission:
    - 3> consider it as a "Radio link failure", refer to [59].

When a radio link failure occurs, the UE shall:

- 1> clear the dedicated physical channel configuration;
- 1> perform actions as specified for the ongoing procedure;
- 1> if no procedure is ongoing or no actions are specified for the ongoing procedure:
  - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "radio link failure".

# 8.5.7 Open loop power control

For FDD and prior to PRACH transmission the UE shall:

- 1> acquire valid versions of the necessary System Information IEs as follows:
  - 2> if the UE has stored valid versions of the IEs "Primary CPICH Tx power" and "Constant value":
    - 3> use the stored content of the IEs.
  - 2> otherwise:
    - 3> read and store the IE "Primary CPICH Tx power" and "Constant value" in System Information Block type 6 (or System Information Block type 5 or System Information Block type 5 bis, if System Information Block type 6 is not being broadcast).
  - 2> if the UE has a valid version of the IE "UL interference" stored:
    - 3> use the stored content of the IE "UL interference".
  - 2> otherwise:
    - 3> read and store the IE "UL interference" in System Information Block type 7;
    - 3> if the UE fails to read the IE "UL interference" in System Information Block type 7 due to bad radio conditions, the UE shall use the last stored IE "UL interference".
- 1> measure the value for the CPICH\_RSCP;
- 1> calculate the power for the first preamble as:

 $\label{eq:preamble_Initial_Power} Primary\ CPICH\ TX\ power - CPICH\_RSCP + UL\ interference + Constant\ Value \\ Where.$ 

Primary CPICH TX power shall have the value of IE "Primary CPICH Tx power",

UL interference shall have the value of IE "UL interference"; and

Constant Value shall have the value of IE "Constant value".

- 1> as long as the physical layer is configured for PRACH transmission:
  - 2> continuously recalculate the Preamble\_Initial\_Power when any of the broadcast parameters used in the above formula changes; and

2> resubmit to the physical layer the new calculated Preamble\_Initial\_Power.

#### For 3.84 Mcps TDD or 7.68 Mcps TDD the UE shall:

- 1> if in the IE "Uplink DPCH Power Control info" the "CHOICE UL OL PC info" has the value "Broadcast UL OL PC info":
  - 2> prior to DPCH transmission the UE shall:
    - 3> acquire valid versions of the necessary System Information IEs as follows:
      - 4> if the UE has stored valid versions of the IEs "Primary CCPCH Tx power" and "DPCH Constant value":
        - 5> use the stored content of the IEs.
      - 4> otherwise:
        - 5> read and store the IE "Primary CCPCH Tx power" and "DPCH Constant value" in System Information Block type 6 (or System Information Block type 5, if System Information Block type 6 is not being broadcast).
    - 3> if the UE has a valid version of the IE "UL interference" for each active UL timeslot stored:
      - 4> use the stored content of the IE "UL interference" for each active UL timeslot.
    - 3> otherwise:
      - 4> read and store the IE "UL Timeslot Interference" for each active UL timeslot in System Information Block type 14;
      - 4> if the UE fails to read the IE "UL Timeslot Interference" for each active UL time slot in System Information Block type 14 due to bad radio conditions, the UE shall use the last stored IE "UL Timeslot interference" for each active UL timeslot.

#### 1> otherwise:

- 2> acquire Reference Power, Constant Values and I<sub>BTS</sub> for all active UL timeslots from the IE "Uplink DPCH Power Control info".
- 1> for PUSCH, PRACH and HS-SICH power control:
  - 2> prior to PUSCH or PRACH transmission the UE shall:
    - 3> acquire valid versions of the necessary System Information IEs as follows:
      - 4> if the UE has stored valid versions of the IEs "Primary CCPCH Tx power" and "PUSCH Constant value" for PUSCH transmissions or "PRACH Constant value" for PRACH transmissions:
        - 5> use the stored content of the IEs.
      - 4> otherwise:
        - 5> read and store the IE "Primary CCPCH Tx power" and "PUSCH Constant value" for PUSCH transmissions or "PRACH Constant value" for PRACH transmissions in System Information Block type 6 (or System Information Block type 5, if System Information Block type 6 is not being broadcast).
    - 3> if the UE has a valid version of the IE "UL interference" for each active UL timeslot stored:
      - 4> use the stored content of the IE "UL interference" for each active UL timeslot.
    - 3> otherwise:
      - 4> read and store the IE "UL Timeslot Interference" for each active UL timeslot in System Information Block type 14;

4> if the UE fails to read the IE "UL Timeslot Interference" for each active UL time slot in System Information Block type 14 due to bad radio conditions, the UE shall use the last stored IE "UL Timeslot interference" for each active UL timeslot.

calculate the UL transmit power according to the following formula for the PRACH continuously while the physical channel is active:

$$P_{PRACH} = L_{PCCPCH} + I_{BTS} + PRACH Constant value,$$

- 2> 3dB shall be added to RACH Constant Value in the above equation for the case where RACH Spreading Factor = 8:
- 2> for 7.68 Mcps TDD, 3dB shall be added to RACH Constant Value in the above equation for the case where RACH Spreading Factor = 16.
- 1> calculate the UL transmit power according to the following formula for the DPCH continuously while the physical channel is active:

$$P_{DPCH} = \alpha L_{PCCPCH} + (1-\alpha)L_0 + I_{BTS} + SIR_{TARGET} + DPCH$$
 Constant value

1> calculate the UL transmit power according to the following formula for the PUSCH continuously while the physical channel is active:

$$P_{PUSCH} = \alpha L_{PCCPCH} + (1-\alpha)L_0 + I_{BTS} + SIR_{TARGET} + PUSCH$$
 Constant value

1> calculate the initial UL transmit power for HS-SICH according to the following formula:

$$P_{\text{HS-SICH}} = \alpha L_{PCCPCH} + (1-\alpha)L_0 + I_{BTS} + SIR_{TARGET} + HS-SICH$$
 Constant value

Where, for all the above equations for 3.84 Mcps TDD or 7.68 Mcps TDD the following apply:

- P<sub>PRACH</sub>, P<sub>DPCH</sub>, P<sub>PUSCH</sub> and P<sub>HS-SICH</sub>: Transmitter power level in dBm;
- Pathloss values:
  - L<sub>PCCPCH</sub>: Measurement representing path loss in dB based on beacon channels (the reference transmit power is signalled as the value of the IE "Primary CCPCH Tx Power" on BCH in System Information Block type 6 (or System Information Block type 5, according to subclause 8.1.1.6.5), or individually signalled in the IE" Uplink DPCH Power Control info").
  - L<sub>0</sub>: Long term average of path loss in dB;
  - If the midamble is used in the evaluation of L<sub>PCCPCH</sub> and L<sub>0</sub>, and the Tx diversity scheme used for the P-CCPCH involves the transmission of different midambles from the diversity antennas, the received power of the different midambles from the different antennas shall be combined prior to evaluation of the variables.
- $I_{BTS}$ : Interference signal power level at cell's receiver in dBm.  $I_{BTS}$  shall have the value of the IE "UL Timeslot Interference" (IE "UL Timeslot Interference" is broadcast on BCH in System Information Block type 14 or individually signalled to each UE in the IE "Uplink DPCH Power Control info" for each active uplink timeslot).
- $\alpha$ :  $\alpha$  is a weighting parameter, which represents the quality of path loss measurements.  $\alpha$  may be a function of the time delay between the uplink time slot and the most recent down link PCCPCH time slot.  $\alpha$  is calculated at the UE.  $\alpha$  shall be smaller or equal to the value of the IE "Alpha". If the IE "Alpha" is not explicitly signalled to the UE  $\alpha$  shall be set to 1. If UE is capable of estimating its position by using the OTDOA IPDL method, the UE shall use the IPDL- $\alpha$  parameter.
- SIR<sub>TARGET</sub>: Target SNR in dB. This value is individually signalled to UEs in IE "UL target SIR" in IE "Uplink DPCH Power Control Info" or in IE "PUSCH Power Control Info" or in IE "HS-SICH Power Control Info".
- PRACH Constant value: PRACH Constant value shall have the value of the IE "PRACH Constant value".
- DPCH Constant value: DPCH Constant value shall have the value of the IE "DPCH Constant value".

- PUSCH Constant value: PUSCH Constant value shall have the value of the IE "PUSCH Constant value".
- HS-SICH Constant value: HS-SICH Constant value shall have the value of the IE "HS-SICH Constant value".
- Values received by dedicated signalling shall take precedence over broadcast values.
- If IPDLs are applied, the UE may increase UL Tx power by the value given in the IE "Max power increase". This power increase is only allowed in the slots between an idle slot and the next beacon slot.

#### For 1.28 Mcps TDD the UE shall:

- 1> acquire valid versions of the necessary System Information IEs as follows:
  - 2> if the UE has stored a valid version of the IE "Primary CCPCH Tx Power":
    - 3> use the stored content of the IE.
  - 2> otherwise:
    - 3> read and store the IE "Primary CCPCH Tx Power" from System Information Block type 6 (or System Information Block type 5, if System Information Block type 6 is not being broadcast).
- 1> calculate the UL transmit power according to the following formula for each UpPCH code transmission:

$$P_{UpPCH} = L_{PCCPCH} + PRX_{UpPCHdes} + (i-1)* Pwr_{ramp}$$

- NOTE: When i equals 1, the initial signature power "Signature\_Initial\_Power" defined in [33] corresponds to  $P_{\text{UnPCH}}$  with i set to 1.
- 1> calculate the UL transmit power according to the following formula for each PRACH transmission:

$$P_{PRACH} = L_{PCCPCH} + PRX_{PRACHdes} + (i_{UpPCH}-1) * Pwr_{ramp}$$

1> calculate the initial UL transmit power according to the following formula for the PUSCH. Once the UE receives TPC bits relating to the PUSCH then it transitions to closed loop power control. If successive PUSCH resource allocations are contiguous then no return is made to open loop power control at the beginning of the succeeding resource allocation.

$$P_{USCH} = PRX_{PUSCHdes} + L_{PCCPCH}$$

1> calculate the initial UL transmit power for HS-SICH according to the following formula:

$$P_{HS-SICH} = PRX_{HS-SICH} + L_{PCCPCH}$$

1> calculate the initial UL transmit power according to the following formula for the DPCH. Once the UE receives TPC bits relating to the uplink DPCH then it transitions to closed loop power control.

$$P_{DPCH} = PRX_{DPCHdes} + L_{PCCPCH}$$

1> calculate the initial UL transmit power for E-PUCH according to the following formula:

$$P_{\text{E-PUCH}} = PRX_{\text{des\_base}} + L_{\text{PCCPCH}} + \beta_{\text{e}}$$

#### Where:

- P<sub>UpPCH</sub>, P<sub>PRACH</sub>, P<sub>DPCH</sub>, P<sub>HS-SICH</sub>, P<sub>USCH</sub>, & P<sub>E-PUCH</sub>: Transmitter power level in dBm.
- L<sub>PCCPCH</sub>: Measurement representing path loss in dB (reference transmit power "Primary CCPCH Tx Power" is broadcast on BCH in System Information Block type 5 and System Information Block type 6, or individually signalled to each UE in the IE" Uplink DPCH Power Control info").
- i is the number of transmission attempts on UpPCH, i=1...Max SYNC UL Transmissions.
- $i_{UpPCH}$  is the final value of i.

- PRX<sub>PRACHdes</sub>: Desired PRACH RX power at the cell's receiver in dBm signalled to the UE by the network in the FPACH response to the UE's successful SYNC\_UL transmission.
- PRX<sub>UpPCHdes</sub>: Desired UpPCH RX power at the cell's receiver in dBm. The value is broadcast in "PRX<sub>UpPCHdes</sub>" in IE "SYNC\_UL info" on BCH and shall be read on System Information Block type 5 and System Information Block type 6. It can also be signalled directly to the UE in IE "Uplink Timing Advance Control" contained in a protocol message triggering a hard handover or a transition from cell FACH to cell DCH state.
- PRX<sub>PUSCHdes</sub>: Desired PUSCH RX power at the cell's receiver in dBm signalled to the UE in IE "PUSCH Power Control Info".
- PRX<sub>DPCHdes</sub>: Desired DPCH RX power at the cell's receiver in dBm signalled to the UE in IE "Uplink DPCH Info" and IE "Uplink DPCH Power Control Info".
- Pwr<sub>ramp</sub>: The UE shall increase its transmission power by the value of the IE "Power Ramp step" by every UpPCH transmission. Its value is signalled in the IE "SYNC UL info" in System Information Block type 5 and System Information Block type 6 or is signalled to the UE in the IE "Uplink Timing Advance Control" contained in a protocol message triggering a hard handover or a transition from cell FACH state to cell DCH state.
- PRX<sub>HS-SICH</sub>: Desired HS-SICH RX power at the cell's receiver in dBm signalled to the UE in IE "Downlink HS-PDSCH Information".
- Ack-Nack Power Offset: Difference in the desired RX power between HS-SICH transmissions conveying an
  acknowledgement and transmissions conveying a negative acknowledgement signalled to the UE in IE "HSSCCH Info".
- PRX<sub>des\_base</sub>: Reference Desired E-PUCH RX power at the cell's receiver in dBm signalled to the UE in IE "E-PUCH Info".
- $\beta_e$ : Gain factor for the selected E-TFC transport block size, the allocated E-PUCH physical resources, and the Modulation type and the HARQ power offset (see [33]).

# 8.5.8 Maintenance of Hyper Frame Numbers

The MSBs of both the ciphering sequence numbers (COUNT-C) and integrity sequence numbers (COUNT-I), for the ciphering and integrity protection algorithms, respectively [40], are called the Hyper Frame Numbers (HFN).

For integrity protection, the UE shall:

1> maintain COUNT-I as specified in subclause 8.5.10.

The following hyper frame numbers types are defined:

MAC-d HFN:

24 MSB of COUNT-C for data sent over RLC TM

RLC UM HFN:

25 MSB of COUNT-C for data sent over RLC UM

RLC AM HFN:

20 MSB of COUNT-C for data sent over RLC AM

RRC HFN:

28 MSB of COUNT-I

For non-transparent mode RLC signalling radio bearers and radio bearers, the UE shall:

- 1> maintain one uplink and one downlink COUNT-C per signalling radio bearer and per radio bearer and one uplink and one downlink COUNT-I per signalling radio bearer;
- 1> increment the RLC UM HFN and RLC AM HFN in uplink and downlink by one each time the RLC sequence number wraps around in uplink and downlink respectively;

- 1> if the activation time for a new ciphering configuration set by an RRC procedure is equal to zero:
  - 2> apply the configured RLC UM HFN or RLC AM HFN at this activation time, i.e. the configured HFN is not incremented.

NOTE: On the receiver side it may happen that the RLC PDU with sequence number equal to the activation time is lost and the first received PDU after the activation time implies a wrap around of the sequence number compared to the activation time. In this case the configured HFN is incremented by one. This action is taken only when the activation time is set to a RLC PDU sequence number value other than zero.

For all transparent mode RLC signalling radio bearers and radio bearers of each CN domain, the UE shall:

- 1> maintain one COUNT-C, common for all radio bearers in uplink and downlink;
- 1> increment the MAC-d HFN by one each time the CFN wraps around;
- 1> if the activation time for a new ciphering configuration set by an RRC procedure is equal to zero:
  - 2> apply the configured MAC-d HFN at this activation time, i.e. the configured HFN is not incremented.
- 1> maintain one uplink and one downlink COUNT-I per signalling radio bearer.

NOTE: In this release of the specification there is only an uplink transparent mode COUNT-I, which is used for signalling radio bearer RB0.

COUNT-C and COUNT-I are defined in [40], with the following supplement for COUNT-C: for transparent mode RLC radio bearers with a transmission time interval of x radio frames (x = 2, 4, 8), the MAC PDU is carried by L1 in x consecutive radio frames due to radio frame segmentation. In this case, the CFN of the first radio frame in the TTI shall be used as the CFN component of COUNT-C for ciphering of all data in the TTI [15].

## 8.5.9 START value calculation

In connected mode, if a security mode command procedure has been successfully completed for a CN domain during the current RRC connection, the START value for that CN domain is calculated as:

Let  $START_X$  = the START value for CN domain 'X' prior to the calculation below:

 $START_{X'} = MSB_{20}$  ( MAX {COUNT-I | radio bearers and signalling radio bearers using the most recently configured  $CK_{X}$  and  $IK_{X}$ }) + 2.

- if  $START_X$ '= the maximum value = 1048575 then  $START_X$  =  $START_X$ ';
- if the current START<sub>X</sub> < START<sub>X</sub>' then START<sub>X</sub> = START<sub>X</sub>', otherwise START<sub>X</sub> is unchanged.

NOTE: Here, "most recently configured" means that if there is more than one key in use for a CN domain, due to non-expiry of the ciphering and/or integrity protection activation time for any signalling radio bearers and/or radio bearers, do not include the COUNT-I/COUNT-C for these signalling radio bearers and/or radio bearers in the calculation of the START x'.

COUNT-C corresponding to non-ciphered radio bearers (i.e. RBs with ciphering status set to "not started") shall not be included in the calculation of the  $START_{X}$ . If a radio bearer is released and the radio bearer was ciphered, the values of the COUNT-C at the time the radio bearer is released shall be taken into account in the calculation of the  $START_{X}$ .

If a security mode command procedure has not been successfully completed for a CN domain during the current RRC connection, the UE shall use the latest transmitted START value for this CN domain.

# 8.5.10 Integrity protection

If the "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started" then the UE shall:

1> perform integrity protection (and integrity checking) on all RRC messages, with the following exceptions:

HANDOVER TO UTRAN COMPLETE

MBMS ACCESS INFORMATION

MBMS COMMON P-T-M RB INFORMATION

MBMS CURRENT CELL P-T-M RB INFORMATION

MBMS GENERAL INFORMATION

MBMS MODIFIED SERVICES INFORMATION (MCCH only)

MBMS NEIGHBOURING CELL P-T-M RB INFORMATION

MBMS SCHEDULING INFORMATION

MBMS UNMODIFIED SERVICES INFORMATION

PAGING TYPE 1

PUSCH CAPACITY REQUEST

PHYSICAL SHARED CHANNEL ALLOCATION

RRC CONNECTION REQUEST

RRC CONNECTION SETUP

RRC CONNECTION SETUP COMPLETE

RRC CONNECTION REJECT

RRC CONNECTION RELEASE (CCCH only)

SYSTEM INFORMATION

SYSTEM INFORMATION CHANGE INDICATION

TRANSPORT FORMAT COMBINATION CONTROL (TM DCCH only)

If the "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Not started" then integrity protection (and integrity checking) shall not be performed on any RRC message.

- "Uplink RRC HFN";
- "Downlink RRC HFN".

and two message sequence numbers:

- "Uplink RRC Message sequence number";
- "Downlink RRC Message sequence number".

The above information is stored in the variable INTEGRITY\_PROTECTION\_INFO per signalling radio bearer (RB0-RB4).

Upon the first activation of integrity protection for an RRC connection, UE and UTRAN initialise the "Uplink RRC Message sequence number" and "Downlink RRC Message sequence number" for all signalling radio bearers as specified in subclauses 8.6.3.5 and 8.5.10.1.

The RRC message sequence number (RRC SN) is incremented for every integrity protected RRC message.

If the IE "Integrity Protection Mode Info" is present in a received message, the UE shall:

1> perform the actions in subclause 8.6.3.5 before proceeding with the integrity check of the received message.

## 8.5.10.1 Integrity protection in downlink

If the UE receives an RRC message on signalling radio bearer with RB identity n, the "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started" and the IE 'Integrity check info' is present the UE shall:

- 1> check the value of the IE "RRC message sequence number" included in the IE "Integrity check info";
  - 2> if the "Downlink RRC Message sequence number" is not present in the variable INTEGRITY\_PROTECTION\_INFO:
    - 3> initialise the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO with the value of the IE "RRC message sequence number" included in the IE "Integrity check info" of the received message.
  - 2> if the "Downlink RRC Message sequence number" is present in the variable INTEGRITY PROTECTION INFO:
    - 3> if the RRC message sequence number is lower than the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY PROTECTION INFO:
      - 4> increment "Downlink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY PROTECTION INFO with one.
- NOTE: The actions above imply that also for the case the "Downlink RRC HFN" is re-initialised by a security mode control procedure, this "Downlink RRC HFN" value is incremented by one before it is applied for the integrity protection of any received message if the conditions above are fulfilled.
  - 3> if the RRC message sequence number is equal to the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO:
    - 4> discard the message.
- 1> calculate an expected message authentication code in accordance with subclause 8.5.10.3;
- 1> compare the expected message authentication code with the value of the received IE "message authentication code" contained in the IE "Integrity check info";
  - 2> if the expected message authentication code and the received message authentication code are the same, the integrity check is successful:
    - 3> update the "Downlink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO with the value of the IE "RRC message sequence number" included in the IE "Integrity check info" of the received RRC message.
  - 2> if the calculated expected message authentication code and the received message authentication code differ:
    - 3> act as if the message was not received.

If the UE receives an RRC message on signalling radio bearer with identity 0, 1, or 2, the "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started" and the IE 'Integrity check info' is not present the UE shall:

1> discard the message.

If the UE receives an RRC message on signalling radio bearer with identity 3 or 4, the "Status" in the variable INTEGRITY PROTECTION INFO has the value "Started" and the IE 'Integrity check info' is not present:

- 1> if a security mode command procedure has not been successfully completed during the current RRC connection for the CN domain indicated by IE "CN Domain Identity" in the received message:
  - 2> the UE shall forward the message to upper layer.
- 1> else:
  - 2> the UE shall discard the message.

UTRAN may transmit several copies of the same message in the downlink to increase the probability of proper reception of the message by the UE. In such a case, the RRC SN for these repeated messages should be the same.

## 8.5.10.2 Integrity protection in uplink

Prior to sending an RRC message using the signalling radio bearer with radio bearer identity n, and the "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started" the UE shall:

- 1> increment "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO with 1, even if the message is a retransmission of a previously transmitted message.
- 1> if the "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO equals zero:
  - 2> increment "Uplink RRC HFN" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO by one.
- NOTE 1: The actions above imply that also for the case the "Uplink RRC HFN" is re-initialised by a security mode control procedure, this "Uplink RRC HFN" is incremented before it is applied in the integrity protection of any transmitted message if the conditions above are fulfilled.
- NOTE 2: For SRB0, this is also valid in case the Message Sequence Number has been increased by N302 +2 resulting in an MSN which equals 0 (i.e.: SRB0 UL activation time equals 0). Then the uplink RRC HFN is incremented by 1 after it is re-initialized and before it is applied in the integrity protection of any transmitted message.
- 1> calculate the message authentication code in accordance with subclause 8.5.10.3;
- 1> replace the "Message authentication code" in the IE "Integrity check info" in the message with the calculated message authentication code;
- 1> replace the "RRC Message sequence number" in the IE "Integrity check info" in the message with contents set to the new value of the "Uplink RRC Message sequence number" for signalling radio bearer RBn in the variable INTEGRITY\_PROTECTION\_INFO.

In the response message for the procedure ordering the security reconfiguration, the UE indicates the activation time, for each signalling radio bearer. When the new integrity configuration is to be applied in uplink, UTRAN should start to apply the new integrity protection configuration according to the activation time for each signalling radio bearer (except for the signalling radio bearer which is used to send the message that is reconfiguring the security configuration where the new configuration is to be applied starting from and including reception of the response message).

## 8.5.10.3 Calculation of message authentication code

The UE shall calculate the message authentication code in accordance with [40]. The input parameter MESSAGE [40] for the integrity algorithm shall be constructed by:

- 1> setting the "Message authentication code" in the IE "Integrity check info" in the message to the value of the IE "RB identity" for the signalling radio bearer;
- 1> setting the "RRC Message sequence number" in the IE "Integrity check info" in the message to zero;
- 1> encoding the message;
- 1> appending RRC padding (if any) as a bit string to the encoded bit string as the least significant bits.

For usage on an RRC message transmitted or received on the radio bearer with identity n, the UE shall:

- 1> construct the input parameter COUNT-I [40] by appending the following IEs from the IE "Signalling radio bearer specific integrity protection information" for radio bearer n in the variable INTEGRITY PROTECTION INFO:
  - 2> for uplink:
    - 3> "Uplink RRC HFN", as the MSB, and "Uplink RRC Message sequence number", as LSB.
  - 2> for downlink:

3> "Downlink RRC HFN", as the MSB, and the IE "RRC message sequence number" included in the IE "Integrity check info", as LSB.

## 8.5.11 FACH measurement occasion calculation

For TDD, when in CELL\_FACH state and when the variable C\_RNTI is non-empty, or for FDD, when in CELL\_FACH state, when the variable C\_RNTI is non-empty and when variable HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE is set to FALSE,

then the UE shall perform measurements as specified in subclauses 8.4.1.6 and 8.4.1.9 during the frame(s) with the SFN value fulfilling the following equation:

SFN div 
$$N = C_RNTI \mod M_REP + n * M_REP$$

where

- N is the TTI (in number of 10ms frames) of the FACH having the largest TTI on the SCCPCH selected by the UE according to the procedure in subclause 8.5.19. FACHs that only carry MBMS logical channels (MTCH, MSCH, or MCCH) are excluded from measurement occasion calculations.
- C\_RNTI is the C-RNTI value of the UE stored in the variable C\_RNTI
- M\_REP is the Measurement Occasion cycle length. According to the equation above, a FACH Measurement Occasion of N frames will be repeated every  $N * M_REP$  frame, and  $M_REP = 2^k$ .

where.

- k is the FACH Measurement occasion cycle length coefficient.

  The value of the FACH Measurement occasion cycle length coefficient is read in system information in "System Information Block type 11" or "System Information Block type 12" in the IE "FACH measurement occasion info".
- n = 0,1,2... as long as SFN is below its maximum value

The UE is allowed to measure on other occasions in case the UE moves "out of service" area or in case it can simultaneously perform the ordered measurements.

A UE in TDD mode shall use the frame(s) with the SFN value fulfilling the above equation for neighbour cells measurements.

For FDD when in CELL\_FACH state, when the variable C\_RNTI is non-empty and when variable HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE is set to TRUE,

then the UE in FDD mode shall perform measurements as specified in subclauses 8.4.1.6 and 8.4.1.9 during the frame(s) with the SFN value fulfilling the following equation:

$$SFN = H-RNTI \mod M REP + n * M REP$$

where

- H-RNTI is the value stored in the variable H\_RNTI.
- M\_REP is the Measurement Occasion cycle length. According to the equation above, a FACH Measurement Occasion of 10ms-frame will be repeated every M REP frame, and M REP =  $2^k$ .

where,

- k is the FACH Measurement occasion cycle length coefficient.
   The value of the FACH Measurement occasion cycle length coefficient is read in system information in "System Information Block type 11" or "System Information Block type 12" in the IE "FACH measurement occasion info".
- n = 0,1,2... as long as SFN is below its maximum value.

The UE is allowed to measure on other occasions in case the UE moves "out of service" area or in case it can simultaneously perform the ordered measurements.

NOTE: For FDD, in order to meet the MBMS demodulation performance requirements [21], a UE receiving MBMS PTM may not be able use the entire measurement occasion.

## 8.5.12 Establishment of Access Service Classes

The PRACH resources (i.e. access slots and preamble signatures for FDD), timeslot (with specific frame allocation and channelisation code for 3.84 Mcps TDD and 7.68 Mcps TDD, and SYNC\_UL codes (with specific frame allocation) for 1.28 Mcps TDD) may be divided between different Access Service Classes in order to provide different priorities of RACH usage. It is possible for more than one ASC or for all ASCs to be assigned to the same access slot/signature space in FDD or frame allocation/channelisation codes in 3.84 Mcps TDD or 7.68 Mcps TDD, or frame allocation/SYNC\_UL codes in 1.28 Mcps TDD.

Access Service Classes shall be numbered in the range  $0 \le i \le \text{NumASC} \le 7$  (i.e. the maximum number of ASCs is 8). An ASC is defined by an identifier, i, that defines a certain partition of the PRACH resources (SYNC\_UL resources in 1.28 Mcps TDD) and an associated persistence value  $P_i$ . A set of ASC parameters consists of "NumASC+1" such parameters  $(i, P_i)$ , i = 0, ..., NumASC.

PRACH partitions shall be established using the information element "PRACH partitioning". The persistence values  $P_i$  to be associated with each ASC shall be derived from the dynamic persistence level N = 1,..., 8 which is broadcast in System Information Block 7, and the persistence scaling factors  $s_i$ , broadcast in System Information Block Type 5 or System Information Block type 5 bis and possibly also in System Information Block Type 6, as follows:

$$P(N) = 2^{-(N-1)}$$

| ASC # i | 0 | 1    | 2                   | 3                   | 4                   | 5                   | 6                   | 7                   |
|---------|---|------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Pi      | 1 | P(N) | s <sub>2</sub> P(N) | s <sub>3</sub> P(N) | s <sub>4</sub> P(N) | s <sub>5</sub> P(N) | s <sub>6</sub> P(N) | s <sub>7</sub> P(N) |

In addition, MBMS specific persistence values may be provided within the MBMS MODIFIED SERVICES INFORMATION message. The UE behaviour upon receiving upon receiving an MBMS dynamic persistence value is specified in subclause 8.6.9.1a.

Scaling factors  $s_i$  are provided optionally for i = 2,..., NumASC, where NumASC+1 is the number of ASCs as defined by PRACH partitioning. If no scaling factors are broadcast, default value 1 shall be used if NumASC  $\geq 2$ .

If  $k \ge 1$  scaling factors are broadcast and NumASC  $\ge k+2$  then the last scaling factor  $s_{k+1}$  shall be used as default for the ASCs where i > k+1.

In the case of E-RUCCH operation (3.84/7.68 Mcps TDD only) a separate set of persistence values will be used. For E-RUCCH a single scaling factor  $S_r$  is signalled. If the E-RUCCH shares resource with a PRACH then dynamic perstistence levels of the PRACH are used and persistence values are determined using the table below:

| ASC # i                  | 0 | 1    | 2 – 7               |
|--------------------------|---|------|---------------------|
| P <sub>i (E-RUCCH)</sub> | 1 | P(N) | S <sub>r</sub> P(N) |

Else if the E-RUCCH does not share resource with a PRACH then persistence values are determined using the table below:

| ASC # i      | 0 | 1 | 27 |
|--------------|---|---|----|
| Pi (E-RUCCH) | 1 | 1 | Sr |

The establistment of Access Service Classes for E-RUCCH (1.28 Mcps TDD only) is similar as PRACH, differently Access Service Classes parameters and persistence scaling factors of E-RUCCH may be acquired from the information element "E-RUCCH info", e.g. in the case of E-DCH serving cell change. Only in the case that the UEs with E-DCH and E-RUCCH configured on the Primary Frequency of the multi-frequency cell, the E-DCH serving cell unchanged and the UEs can obtain the dynamic persistence level N from SIB7 according to the configuration of information element "E-RUCCH info", the dynamic persistence value N shall be used. Otherwise, dynamic persistence level N=1 shall always be used. The persistence values are determined using the table below:

| ASC # i                  | 0 | 1    | 2                   | 3                   | 4                   | 5                   | 6                   | 7                   |
|--------------------------|---|------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| P <sub>i (E-RUCCH)</sub> | 1 | P(N) | s <sub>2</sub> P(N) | s <sub>3</sub> P(N) | s <sub>4</sub> P(N) | s <sub>5</sub> P(N) | s <sub>6</sub> P(N) | s <sub>7</sub> P(N) |

The set of ASC parameters is provided to MAC with the CMAC-Config-REQ primitive (see [15]), the PRACH partitioning is provided to PHY using the CPHY-RL-Setup-REQ primitive (see [34]). For 3.84/7.68 Mcps TDD E-DCH operation the E-RUCCH persistence values will also be provided to MAC with the CMAC-Config-REQ primitive.

The ASC enumeration shall be such that it corresponds to the order of priority (ASC 0 = highest priority, ASC 7 = lowest priority). ASC 0 shall be used in case of Emergency Call or for reasons with equivalent priority.

ASCs are numbered according to the order in which the IEs "ASC Setting" appear in the IE "PRACH partitioning", where the first IE "ASC Setting" describes ASC 0, the second IE "ASC Setting" describes ASC 1, etc.

At radio bearer setup/reconfiguration each involved logical channel is assigned a MAC Logical channel Priority (MLP) in the range 1,...,8. When the MAC sublayer is configured for RACH transmission in the UE, these MLP levels shall be employed for ASC selection on MAC.

# 8.5.13 Mapping of Access Classes to Access Service Classes

Access Classes shall only be applied at initial access, i.e. when sending an RRC CONNECTION REQUEST message. A mapping between Access Class (AC) and Access Service Class (ASC) shall be indicated by the information element "AC-to-ASC mapping" in System Information Block type 5 or System Information Block type 5bis. The correspondence between AC and ASC shall be indicated as follows.

| AC  | 0 - 9              | 10                 | 11                 | 12                 | 13                 | 14                 | 15                 |
|-----|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| ASC | 1 <sup>st</sup> IE | 2 <sup>nd</sup> IE | 3 <sup>rd</sup> IE | 4 <sup>th</sup> IE | 5 <sup>th</sup> IE | 6 <sup>th</sup> IE | 7 <sup>th</sup> IE |

In the table, " $n^{th}$  IE" designates an ASC number i in the range 0 - 7 to AC. If the ASC indicated by the " $n^{th}$  IE" is undefined, the UE behaviour is unspecified.

For the random access, the parameters implied by the respective ASC shall be employed. In case the UE is member of several ACs it shall select the ASC for the highest AC number. In connected mode, AC shall not be applied.

# 8.5.14 PLMN Type Selection

Depending on UE configuration, the UE is operating in "ANSI-41 mode" or "GSM-MAP mode".

# 8.5.14a Neighbour cells list narrowing for cell reselection

While a UE is camping on a suitable cell, a UE having performed the PLMN identification of the neighbour cells as specified in subclause 8.1.1.6.18 shall narrow the cell list to be used for cell reselection ([4]) to those neighbour cells for which:

The PLMN identity is part of the PLMNs that can make a cell suitable as defined in [4].

## 8.5.15 CFN calculation

The DOFF used in the formulas in this clause concerns the value of IE "Default DPCH Offset Value" received in the message that instructs the UE to enter CELL\_DCH state or to perform timing re-initialised hard handover.

Subclause 8.5.15.5 is used in FDD to initialise the CFN for MTCH and/or MSCH if the IE "MBMS Soft Combining Timing Offset" is included for an S-CCPCH in MBMS CURRENT CELL P-T-M RB INFORMATION or MBMS NEIGHBOURING CELL P-T-M RB INFORMATION, and if only MTCH and/or MSCH are on the S-CCPCH. Otherwise, subclauses 8.5.15.1 through 8.5.15.4 are used to intialise the CFN.

## 8.5.15.1 Initialisation for CELL\_DCH state after state transition

When the UE receives any of the messages causing the UE to perform a state transition to CELL\_DCH, the UE shall set the CFN in relation to the SFN of the first radio link listed in the IE "Downlink information per radio link list" included in that message according to the following formula:

- for FDD:

 $CFN = (SFN - (DOFF \text{ div } 38400)) \mod 256$ 

where the formula gives the CFN of the downlink DPCH or F-DPCH frame which starts at the same time as or which starts during the PCCPCH frame with the given SFN. DOFF is determined according to subclause 8.6.6.14.

for TDD:

 $CFN = (SFN - DOFF) \mod 256$ .

## 8.5.15.2 Initialisation in CELL DCH state at hard handover

When the UE is in CELL\_DCH state and receives any of the messages causing the UE to perform a hard handover, the UE shall check the IE "Timing indication" in that message and:

- 1> if IE "Timing indication" has the value "initialise" (i.e. timing re-initialised hard handover):
  - 2> read SFN on target cell identified by the first radio link listed in the IE "Downlink information per radio link list" included in that message;
  - 2> set the CFN according to the following formula:

3> for FDD:

where the formula gives the CFN of the downlink DPCH or F-DPCH frame which starts at the same time as or which starts during the PCCPCH frame with the given SFN.

3> for TDD:

$$CFN = (SFN - DOFF) \mod 256.$$

1> if IE "Timing indication" has the value "maintain" (i.e. timing-maintained hard handover), the UE shall keep CFN with no change due to the hard handover, and only increase CFN (mod 256) by 1 every frame.

## 8.5.15.3 Initialisation for CELL FACH

Unless the conditions of subclause 8.5.15.5 are met, when the UE performs cell selection, re-selection or changes to CELL\_FACH state the UE shall set CFN for all common or shared channels according to:

$$CFN = SFN \mod 256$$

where the formula gives the CFN of the downlink common or shared channel frame which starts at the same time as or which starts during the PCCPCH frame with the given SFN.

After the initialisation, the CFN in the UE is increased (mod 256) by 1 every frame.

## 8.5.15.4 Initialisation after intersystem handover to UTRAN

Upon inter RAT handover to UTRAN the UE shall, regardless of the value received within IE "Timing indication" (if received):

1> read SFN on target cell and set the CFN according to the following formula:

2> for FDD:

$$CFN = (SFN - (DOFF div 38400)) \mod 256$$

where the formula gives the CFN of the downlink DPCH frame which starts at the same time as or which starts during the PCCPCH frame with the given SFN.

2> for TDD:

$$CFN = (SFN - DOFF) \mod 256.$$

# 8.5.15.5 Initialisation for MTCH and/or MSCH carried on S-CCPCH that may be soft combined

For FDD, if the IE "MBMS Soft Combining Timing Offset" is included for an S-CCPCH in MBMS CURRENT CELL P-T-M RB INFORMATION or MBMS NEIGHBOURING CELL P-T-M RB INFORMATION, and if only MTCH and/or MSCH are on the S-CCPCH, the UE shall set CFN for the S-CCPCH according to:

$$CFN = (SFN - (SCTO \text{ div } 10\text{ms})) \text{ mod } 256$$

where the formula gives the CFN of the downlink S-CCPCH frame which starts at the same time as or which starts during the PCCPCH frame with the given SFN.

the SCTO used in the formula is the IE "MBMS Soft Combining Timing Offset".

After the initialisation, the CFN in the UE is increased (mod 256) by 1 every frame.

## 8.5.16 Configuration of CTCH occasions

The CTCH, carrying CBS data is mapped onto only one S-CCPCH. If more than one CTCH is defined, the first CTCH that is configured in the list of S-CCPCHs is the one that is used for CBS data. If the UE is in connected mode it shall ignore any CTCH configuration contained in System Information Block type 6 and use the CTCH configuration contained in System Information Block 5.

The CTCH occasions are identified by the first radio frame of the TTI that can contain CTCH data. The CTCH occasions are fixed on the system frame number cycle 0 .. 4095 (i.e. no modulo calculation) and thus repeated cyclically.

The CTCH occasions are determined by a set of parameters.

M<sub>TTI</sub>: number of radio frames within the TTI of the FACH used for CTCH

N: period of CTCH allocation on S-CCPCH, integer number of radio frames,  $M_{TTI} \le N \le 256$ , where N is a multiple of  $M_{TTI}$  (see [27] and [31]).

MaxSFN: maximum system frame number = 4095 (see [10]).

K: CBS frame offset, integer number of radio frames  $0 \le K \le N-1$  where K is a multiple of  $M_{TTI}$ .

The CTCH occasions are calculated as follows:

SFN = 
$$(K + m N)$$
,  $m = 0, 1, ..., M$ , with M chosen that  $K+MN \le MaxSFN$ .

The parameters N and K are broadcast as system information.

If the IE "Period of BMC scheduling messages (P)" is included in System Information Block type 5 or System Information Block type 5 bis then BMC Schedule Messages are transmitted periodically every P CTCH occasions. One BMC Schedule Message may be segmented across more than one CTCH occasion. The CTCH occasions that contain the start of the BMC Schedule Messages are calculated as follows:

SFN = 
$$(K + m P N)$$
, where m is an integer and  $0 \le SFN \le MaxSFN$ 

If the IE "Period of BMC scheduling messages (P)" is not included in system information block type 5 then BMC Schedule Messages could be transmitted in any CTCH occasion.

## 8.5.17 PRACH selection

For this version of the specification, when a UE selects a cell, the uplink frequency to be used for the initial PRACH transmission shall have a default duplex frequency spacing offset from the downlink frequency that the cell was selected on. The default duplex frequency separation to be used by the UE is specified in [21] for each frequency band (for FDD only).

NOTE: The PRACH selection scheme assumes that all PRACHs configured in System Information Block type 5, System Information Block type 5bis and System Information Block type 6 support all (implicitly or explicitly) configurable RLC sizes of the cell, i.e. at least the transport formats corresponding to a single transport block of each applicable RLC size of the cell must be defined for each PRACH.

The UE shall select a "PRACH system information" according to the following rule. The UE shall:

- 1> select a "PRACH system information" from the ones indicated in the IE "PRACH system information list" in System Information Block type 5 or in System Information Block type 5bis (applicable in Idle Mode and Connected Mode) or System Information Block type 6 (applicable in Connected Mode only), as follows:
  - 2> if in connected mode and System Information Block type 6 is defined and includes PRACH info:
    - 3> compile a list of candidate PRACHs that consists of the PRACH system information listed in System Information Block 6, in the order of appearance as in System Information Block 6.

#### 2>otherwise:

- 3> compile a list of candidate PRACHs that consists of the PRACH system information listed in System Information Block 5 or in System Information Block 5bis, in the order of appearance as in System Information Block 5 or in System Information Block 5bis, respectively.
- 2> in FDD:
  - 3> perform RACH TTI selection as specified in subclause 8.5.18.1.
- 2> in 1.28 Mcps TDD:
  - 3> perform RACH TTI selection according to subclause 8.5.18.2.
- 2> remove from the list of candidate PRACHs those PRACHs that have a TTI length different from the selected value;
- 2> select a PRACH randomly from the list of candidate PRACHs as follows:

"Index of selected PRACH" = floor (rand \* K)

where K is equal to the number of candidate PRACH system informations, "rand" is a random number uniformly distributed in the range  $0 \le \text{rand} < 1$  and "floor" refers to rounding down to nearest integer. The candidate PRACH system informations shall be indexed from 0 to K-1. The random number generator is left to implementation. The scheme shall be implemented such that one of the available PRACH system informations is randomly selected with uniform probability. At start-up of the random number generator in the UE the seed shall be dependent on the IMSI of the UE or time, thereby avoiding that all UEs select the same RACH;

- 2> use the TFCS of the selected PRACH when performing TFC selection (see [15]);
- 2> reselect the PRACH system information when a new cell is selected. RACH reselection may also be performed after each transmission of a Transport Block Set on RACH.
- 1> for emergency call, the UE is allowed to select any of the available PRACH system informations.

After selecting a PRACH system information, the RRC in the UE shall configure the MAC and the physical layer for the RACH access according to the parameters included in the selected "PRACH system information" IE.

## 8.5.18 Selection of RACH TTI

## 8.5.18.1 FDD

In FDD mode, a RACH may employ either 10 or 20 ms TTI. The supported TTI is indicated as a semi-static parameter of the RACH Transport Format in system information. The UE shall select an appropriate TTI length from the RACHs included in the list of candidate PRACH(s) according to the following rule.

The UE shall:

- 1> if only RACHs with one particular TTI length are included in the list of candidate PRACH(s):
  - 2> select this TTI length and proceed as specified in subclause 8.5.17.
- 1> if both PRACHs with 10ms and 20ms TTI lengths are included in the list of candidate PRACH(s):
  - 2> perform TTI selection as follows:
    - 3> when the UE calculates the initial preamble transmit power ("Preamble\_Initial\_Power") as specified in subclause 8.5.7:
      - 4> select a TF to be employed for calculation of a transmit power margin as follows:
        - 5> from the TFs supported by all candidate PRACHs keep those which correspond to a single transport block of all configured RLC sizes (i.e., in idle mode, the RLC size applicable for RB0, in connected mode, the RLC sizes configured with explicit "RB mapping info"). If more than a single TF remain applicable, the UE may select any of these. Preferably the UE should select the TF which is intended to be used at the next transmission or, if such information is not available, the TF corresponding to the largest configured RLC size.
      - 4> calculate a transmit power margin,

Margin = {min(Maximum allowed UL tx power, P\_MAX) -max(Preamble\_Initial\_Power, Preamble Initial Power +  $\Delta$ Pp-m +  $10*log_{10}(1 + (\beta_d/\beta_c)^2)$ }

where "Maximum allowed UL tx power" is the maximum allowed uplink transmit power indicated in system information (in dBm), and P\_MAX is the maximum RF output power of the UE (dBm). The margin shall be calculated for the gain factors  $\beta_d$  and  $\beta_c$  of the TF selected in the step above, using 10ms TTI length.

- NOTE 1: the expression Preamble\_Initial\_Power +  $\Delta Pp$ -m +  $10*log_{10}(1 + (\beta_d/\beta_c)^2)$  represents the total RACH message power if the message would be sent after the initial preamble.
- NOTE 2: For all PRACHs with the same TTI the UTRAN should set each of the IEs "Primary CPICH TX power", "Constant value" to the same value, and within these PRACH configurations, the UTRAN should, for all TFs including a single TB, set each of the IEs "Gain Factor  $\beta_c$ ", "Gain Factor  $\beta_d$ " and "Power offset P pm" to the same value. If these guidelines are not followed, the UE behaviour is unspecified.
- 3> if the resulting "Margin" value is less than 6 dB:
  - 4> select RACH with 20 ms TTI, and proceed as specified in subclause 8.5.17.
  - 3> otherwise, if the last L1 message transmission on PRACH failed (see [15]):
    - 4> the UE may select RACH with 20ms TTI length and proceed as specified in subclause 8.5.17.
  - 3> otherwise:
    - 4> select RACH with 10ms TTI length and proceed as specified in subclause 8.5.17.

## 8.5.18.2 1.28 Mcps TDD

In 1.28 Mcps TDD, a RACH may be assigned a 5, 10 or 20 ms TTI. If, in one cell, more than one RACH is defined a UE shall select the RACH that is to be used for each transmission according to the following rule:

- 1> if only RACHs with one particular TTI length are assigned a transport format that is suitable for the transmission of the transport block set:
  - 2> select this RACH's TTI length.
- 1> if more than one RACHs are assigned a transport format that is suitable for the transmission of the transport block set:
  - 2> select the longest of the TTI lengths of these RACHs.

## 8.5.19 Secondary CCPCH selection

In UTRAN Connected mode, the UE shall select the Secondary CCPCH according to the following rules:

- 1> in Cell\_DCH state:
  - 2> select Secondary CCPCH according to subclause 8.6.6.4.
- 1> in Cell FACH state:
  - 2> if System Information Block type 6 is defined and includes one or more SCCPCH that carry a FACH, compile a list of candidate SCCPCH that consists of these SCCPCH, in the order of appearance in System Information Block type 6.
- NOTE 1: An SCCPCH carries a FACH if the size of the "FACH/PCH information" list within the IE "Secondary CCPCH system information" exceeds 1 or if the size of this list equals 1 while IE "Secondary CCPCH system information" does not contain an IE "PICH info".
  - 2> otherwise:
    - 3> compile a list of candidate SCCPCH that consists of the SCCPCH(s) included in System Information Block type 5 or System Information Block type 5bis that carry a FACH, in the order of appearance in System Information Block type 5 or System Information Block type 5bis.
  - 2> select an SCCPCH from the list of candidate SCCPCHs based on U-RNTI as follows:

"Index of selected SCCPCH" = U-RNTI mod K,

where K is equal to the number of candidate SCCPCHs.

- 1> in Cell\_PCH and URA\_PCH states:
  - 2> if System Information Block type 6 is defined and includes one or more SCCPCH that carry a PCH, compile a list of candidate SCCPCH that consists of these SCCPCH, in the order of appearance in System Information Block type 6
- NOTE 2: An SCCPCH carries a PCH if the IE "Secondary CCPCH system information" contains IE "PICH info"
  - 2> otherwise compile a list of candidate SCCPCH that consists of the SCCPCH(s) included in System Information Block type 5 or System Information Block type 5bis that that carry a PCH, in the order of appearance in System Information Block type 5 or System Information Block type 5bis;
  - 2> select an SCCPCH from the list of candidate SCCPCHs based on U-RNTI as follows:

"Index of selected SCCPCH" = U-RNTI mod K.

where K is equal to the number of candidate SCCPCHs.

The UE shall set the CFN in relation to the SFN of the current cell according to subclause 8.5.15.

The UE shall decode all transport formats on all FACHs multiplexed on the selected S-CCPCH according to its UE capability, as defined in subclauses 8.1.1.6.5 and 8.1.1.6.6, to find blocks adressed to the UE.

# 8.5.19a Secondary CCPCH and FACH selection for MCCH reception

The UE shall select the Secondary CCPCH for acquiring MCCH information according to the following rules:

- 1> if System Information Block type 5 or System Information Block type 5bis is defined and includes an S-CCPCH within the IE "Secondary CCPCH system information" including a FACH for which the IE "MCCH configuration information" is included:
  - 2> select that S-CCPCH and FACH for receiving MCCH.
- 1> otherwise if System Information Block type 5 or System Information Block type 5bis is defined and includes an SCCPCH within the IE "Secondary CCPCH system information MBMS" for which the IE "FACH carrying MCCH" is included:

2> select that S-CCPCH and FACH for receiving MCCH.

## 8.5.20 Unsupported configuration

The UE should set the variable UNSUPPORTED\_CONFIGURATION to TRUE if the received message is not according to the UE capabilities.

## 8.5.21 Actions related to Radio Bearer mapping

When the UE receives the IEs "RB mapping info", "CCCH mapping info", "SRB1 mapping info" and/or the IE "Transport format set", when transport channels, MAC-d flows, MAC-ehs reordering queues or E-DCH MAC-d flows are added or deleted, when the UE performs a cell reselection or a state transition, or when the UE releases a RB, the UE shall for each of the configured Radio Bearers:

- 1> upon moving to CELL\_FACH state from CELL\_DCH state to initiate a cell update procedure and upon subsequent cell reselections until the first successfully completed cell update procedure, only perform the actions defined in the remainder of this subclause after reception of the CELL UPDATE CONFIRM message;
- 1> for FDD, select the multiplexing option according to the following:
  - 2> if the UE is in CELL\_PCH state:
    - 3> for FDD, if the UE does support HS-DSCH reception in CELL\_PCH and URA\_PCH state and IE "HS-DSCH paging system information" is included in System Information Block type 5 or System Information Block type 5bis:
      - 4> if the RB has a multiplexing option with transport channel type "HS-DSCH" for the DL, and the corresponding MAC-ehs reordering queue is configured, and transport channel type "RACH" for the UL:
        - 5> select this multiplexing option.
  - 2> if the UE is in CELL FACH state:
    - 3> for FDD, if the UE does not support HS-DSCH reception in CELL\_FACH state; or
    - 3> if the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis:
      - 4> if the RB has a multiplexing option with transport channel type "FACH" for the DL and transport channel type "RACH" for the UL:
        - 5> select this multiplexing option.
    - 3> else:
      - 4> if the RB has a multiplexing option with transport channel type "HS-DSCH" for the DL, and the corresponding MAC-ehs reordering queue is configured, and transport channel type "RACH" for the UL:
        - 5> select this multiplexing option.
  - 2> if the UE is in CELL DCH state:
    - 3> if the RB has a multiplexing option with transport channel type "DCH + HS-DSCH" for the DL, and both the corresponding DCH transport channel and the corresponding MAC-d flow or MAC-ehs reordering queue are configured, and with transport channel type "E-DCH" for the UL, and the corresponding E-DCH MAC-d flow is configured:
      - 4> select this multiplexing option; else
    - 3> if the RB has a multiplexing option with transport channel type "DCH + HS-DSCH" for the DL, and both the corresponding DCH transport channel and the corresponding MAC-d flow or MAC-ehs reordering queue are configured, and with transport channel type "DCH" for the UL, and the corresponding DCH transport channel is configured:

- 4> select this multiplexing option; else
- 3> if the RB has a multiplexing option with transport channel type "DCH + DSCH" for the DL:
  - 4> the UE behaviour is unspecified; else
- 3> if the RB has a multiplexing option with transport channel type "HS-DSCH" for the DL, and the corresponding MAC-d flow or MAC-ehs reordering queue is configured, and with transport channel type "E-DCH" for the UL, and the corresponding E-DCH MAC-d flow is configured:
  - 4> select this multiplexing option; else
- 3> if the RB has a multiplexing option with transport channel type "HS-DSCH" for the DL, and the corresponding MAC-d flow or MAC-ehs reordering queue is configured, and with transport channel type "DCH" for the UL, and the corresponding DCH transport channel is configured:
  - 4> select this multiplexing option; else
- 3> if the RB has a multiplexing option with transport channel type "DSCH" for the DL:
  - 4> the UE behaviour is unspecified; else
- 3> if the RB has a multiplexing option with transport channel type "DCH" for the DL, and the corresponding DCH transport channel is configured, and with transport channel type "E-DCH" for the UL, and the corresponding E-DCH MAC-d flow is configured:
  - 4> select this multiplexing option; else
- 3> if the RB has a multiplexing option with transport channel type "DCH" for the DL, and the corresponding DCH transport channel is configured, and with transport channel type "DCH" for the UL, and the corresponding DCH transport channel is configured:
  - 4> select this multiplexing option.
- 1> for TDD, select the multiplexing option according to the following:
  - 2> if the UE is in CELL\_FACH state:
    - 3> if the RB has the multiplexing options with the transport channel types "FACH" and "DSCH" for the DL, and the corresponding FACH and DSCH transport channels are configured, and with the transport channel types "RACH" and "USCH" for the UL, and the corresponding RACH and USCH transport channels are configured:
      - 4> if both PUSCH and PDSCH are allocated:
        - 5> select the multiplexing option "DSCH" for DL and "USCH" for UL; else
      - 4> if only PUSCH is allocated:
        - 5> select the multiplexing option "FACH" for DL and "USCH" for UL; else
      - 4> if only PDSCH is allocated:
        - 5> select the multiplexing option "DSCH" for DL and "RACH" for UL; else
      - 4> if neither PUSCH nor PDSCH is allocated:
        - 5> select the multiplexing option "FACH" for DL and "RACH" for UL.
    - 3> if the RB has a single multiplexing option with the transport channel type "FACH" for the DL and the transport channel type "RACH" for the UL:
      - 4> select this multiplexing option; else
    - 3> if the RB has a single multiplexing option with the transport channel type "DSCH" for the DL, and the corresponding DSCH transport channel is configured, and with the transport channel type "USCH" for the UL, and the corresponding USCH transport channel is configured:

- 4> select this multiplexing option; else
- 2> if the UE is in CELL DCH state:
  - 3> if the RB has a multiplexing option with transport channel type "DCH + HS-DSCH" for the DL, and both the corresponding DCH transport channel and the corresponding MAC-d flow or MAC-ehs reordering queue are configured, and with transport channel type "E-DCH" for the UL, and the corresponding E-DCH MAC-d flow is configured:
    - 4> select this multiplexing option; else
  - 3> if the RB has a multiplexing option with transport channel type "DCH + HS-DSCH" for the DL, and both the corresponding DCH transport channel and the corresponding MAC-d flow or MAC-ehs reordering queue are configured, and with transport channel type "DCH" for the UL, and the corresponding DCH transport channel is configured:
    - 4> select this multiplexing option; else
  - 3> if the RB has a multiplexing option with transport channel type "DCH + DSCH" for the DL, and both the corresponding DCH and DSCH transport channels are configured, and with transport channel type "DCH" for the UL, and the corresponding DCH transport channel is configured:
    - 4> select this multiplexing option; else
  - 3> if the RB has a multiplexing option with transport channel type "HS-DSCH" for the DL, and the corresponding MAC-d flow or MAC-ehs reordering queue is configured, and with transport channel type "E-DCH" for the UL, and the corresponding E-DCH MAC-d flow is configured:
    - 4> select this multiplexing option; else
  - 3> if the RB has a multiplexing option with transport channel type "HS-DSCH" for the DL, and the corresponding MAC-d flow or MAC-ehs reordering queue is configured, and with transport channel type "DCH" for the UL, and the corresponding DCH transport channel is configured:
    - 4> select this multiplexing option; else
  - 3> if the RB has a multiplexing option with transport channel type "DCH" for the DL, and the corresponding DCH transport channel is configured, and with transport channel type "E-DCH" for the UL, and the corresponding E-DCH MAC-d flow is configured:
    - 4> select this multiplexing option; else
  - 3> if the RB has a multiplexing option with transport channel type "DCH" for the DL, and the corresponding DCH transport channel is configured, and with transport channel type "DCH" for the UL, and the corresponding DCH transport channel is configured:
    - 4> select this multiplexing option; else
  - 3> if theRB has a multiplexing option with transport channel type "DSCH" for the DL, and the corresponding DSCH transport channel is configured, and with transport channel "USCH" for the UL, and the corresponding USCH transport channel is configured:
    - 4> select this multiplexing option.
- 1> configure the MAC with the appropriate transport format set (with computed transport block sizes) for the transport channel used by that RB; or
- 1> configure the MAC with the appropriate MAC-d flow or MAC-ehs reordering queue used by that RB;
- 1> in case the selected multiplexing option is a multiplexing option on E-DCH:
  - 2> the set of RLC sizes that apply to the logical channel used by that RB consists of all RLC PDU sizes listed in the IE "RLC PDU size list" in the RB mapping info for E-DCH.

1> else:

- 2> determine the sets of RLC sizes that apply to the logical channels used by that RB, based on the IEs "RLC size list" and/or the IEs "Logical Channel List" included in the applicable "Transport format set" (either the ones received in the same message or the ones stored if none were received);
- 1> in case the selected multiplexing option is a multiplexing option on RACH:
  - 2> ignore the RLC size indexes that do not correspond to any RLC size within the Transport Format Set stored for RACH.
  - 2> if there is no remaining RLC size index corresponding to an RLC size within the Transport Format Set stored for RACH:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if RACH is the transport channel to be used on the uplink, if that RB has a multiplexing option on RACH and if it is using AM:
  - 2> apply the largest size amongst the ones derived according to the previous bullet for the RLC size (or RLC sizes in case the RB is realised using two logical channels) for the corresponding RLC entity.
- NOTE: The IE "RB mapping info" is only included in the IE "Predefined RB configurations" in system information when used for Inter-RAT handover to UTRAN and there is no AM RLC size change involved in this case.
- 1> if that RB is using AM and the RLC size applicable to the uplink logical channel transporting data PDUs is different from the one derived from the previously stored configuration; and
- 1> none of the following conditions is met:
  - the RLC size change is caused by a CELL UPDATE CONFIRM and the CELL UPDATE CONFIRM message includes the IE "Downlink counter synchronisation info".
  - the RLC size change is caused by a reconfiguration message, and a cell update procedure occurs during the reconfiguration procedure and the CELL UPDATE CONFIRM message includes the IE "Downlink counter synchronisation info".
  - the RLC size change is caused by a reconfiguration message, and a cell update procedure occurs during this
    reconfiguration procedure and the CELL UPDATE CONFIRM message includes the IE "RLC re-establish
    indicator" being set to TRUE for the corresponding radio bearer.
  - 2> if the RLC size change is caused by a reconfiguration message or a CELL UPDATE CONFIRM; and
  - 2> the IE "one sided RLC re-establishment" is included in that message and is set to TRUE:
    - 3> re-establish the transmitting side of the corresponding RLC entity.
  - 2> else:
    - 3> re-establish the corresponding RLC entity.
  - 2> configure the corresponding RLC entity with the new uplink RLC size;
  - 2> for each AM RLC radio bearer in the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS whose RLC size is changed; and
  - 2> for each AM RLC signalling radio bearer in the CN domain as indicated in the IE "CN domain identity" in the variable LATEST\_CONFIGURED\_CN\_DOMAIN whose RLC size is changed:
    - 3> if the IE "Status" in the variable CIPHERING\_STATUS of this CN domain is set to "Started":
      - 4> if the information causing the RLC re-establishment was included in system information:
        - 5> set the HFN values for the corresponding RLC entity equal to the value of the IE "START" for this CN domain that will be included in the CELL UPDATE message following cell reselection.

- NOTE: Since the UE cannot predict the START value at the time of the next CELL UPDATE transmission in the future, UTRAN should desist from changing the RLC size for a signalling radio bearer within a cell.

  Other than this case the change in RLC size for a signalling radio bearer is known to the UE when reading system information following cell reselection.
  - 4> if the RLC re-establishment is caused by a CELL UPDATE CONFIRM:
    - 5> if the whole RLC entity was re-established:
      - 6> set the HFN values for the corresponding RLC entity in uplink and downlink equal to the value of the IE "START" included in the latest transmitted CELL UPDATE message for this CN domain.
    - 5> if only the transmitting side of the RLC entity was re-established:
      - 6> set the HFN value for the corresponding RLC entity in the uplink equal to the value of the IE "START" included in the latest transmitted CELL UPDATE message for this CN domain.
  - 4> if the RLC re-establishment is caused by a reconfiguration message:
    - 5> if the whole RLC entity was re-established:
      - 6> set the HFN values for the corresponding RLC entity in uplink and downlink equal to the value of the IE "START" that will be included in the reconfiguration complete message for this CN domain.
    - 5> if only the transmitting side of the RLC entity was re-established:
      - 6> set the HFN value for the corresponding RLC entity in the direction uplink equal to the value of the IE "START" that will be included in the reconfiguration complete message for this CN domain.
- NOTE1: If the UTRAN modifies the RLC size for RB2 on any reconfiguration message or Cell Update Confirm message, the UE behaviour is unspecified in this version of the specification.
- NOTE2: The UE cannot rely on the configured Transport Formats to determine the RLC sizes to be used in downlink for a particular logical channel. This size can be signalled explicitly in the RLC Info IE.
- 1> if that RB is using UM:
  - 2> indicate the largest RLC size applicable for uplink to the corresponding RLC entity.
- 1> configure MAC multiplexing according to the selected multiplexing option (MAC multiplexing shall only be configured for a logical channel if the transport channel it is mapped on according to the selected multiplexing option is the same as the transport channel another logical channel is mapped on according to the multiplexing option selected for it);
- 1> configure the MAC with the logical channel priorities according to selected multiplexing option;
- 1> configure the MAC with the set of applicable RLC Sizes for each of the logical channels used for that RB;
- 1> if there is no multiplexing option applicable for the transport channels, MAC-d flows and MAC-ehs reordering queues to be used:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if there is more than one multiplexing option applicable for the transport channels, MAC-d flows or MAC-ehs reordering queues to be used:
  - 2> set the variable INVALID CONFIGURATION to TRUE.

If upon cell re-selection or upon moving to CELL\_FACH state from CELL\_DCH state to initiate cell update procedure the UE sets variable INVALID\_CONFIGURATION to TRUE as a result of the actions defined in this subclause, the UE should:

- 1> move to idle mode;
- 1> release (locally) the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and the established radio access bearers (as stored in the variable ESTABLISHED\_RABS) and indicate this to upper layers;
- 1> perform other actions when entering idle mode from connected mode as specified in subclause 8.5.2.

## 8.5.22 Actions when entering another RAT from connected mode

NOTE: This section does not apply when entering GERAN Iu mode from UTRAN connected mode.

When entering another RAT from connected mode (due to Inter-RAT handover from UTRAN, Inter-RAT cell change order from UTRAN or Inter-RAT cell reselection from UTRAN), after successful completion of the procedure causing the transition to the other RAT, the UE shall:

- 1> if the USIM is present, for each CN domain:
  - 2> if a new security key set was received for this CN domain but was not used either for integrity protection or ciphering during this RRC connection:
    - 3> set the START value for this domain to zero and;
    - 3> store this START value for this domain in the USIM;
  - 2> else:
    - 3> store the current START value for every CN domain in the USIM [50].
- NOTE: Prior to storing the START value, the UE should calculate this START value according to subclause 8.5.9.
- 1> if the SIM is present, for each CN domain:
  - 2> if a new security key was received for this CN domain but was not used either for integrity protection or ciphering during this RRC connection:
    - 3> set the START value for this domain to zero and;
    - 3> store this START value for this domain in the UE.
  - 2> else:
    - 3> store the current START value for this CN domain in the UE.

NOTE: Prior to storing the START value, the UE should calculate this START value according to subclause 8.5.9.

#### 8.5.23 Measured results on RACH

When transmitting an uplink RRC message and System Information Block type 11, System Information Block type 11bis and System Information Block type 12, if transmitted, have been received, the UE shall:

- 1> if the uplink RRC message is an RRC CONNECTION REQUEST message:
  - 2> if the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" are included in System Information Block type 11:
    - 3> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intrafrequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 11.
  - 2> if the IE "Inter-frequency RACH reporting information" is included in System Information Block type 11:
    - 3> if, at the time the message is to be sent, valid measurements are available; and

- 3> there is one or more cells for which the quantity, indicated by the IE "Reporting quantity" in the IE "Inter-frequency RACH reporting information", exceeds the threshold specified by the IE "Inter-frequency RACH reporting threshold":
  - 4> include a measurement report in the IE "Measured results on RACH";
  - 4> include the cells for which the quantity, indicated by the IE "Reporting quantity" in the IE "Interfrequency RACH reporting information", exceeds the threshold specified by the IE "Inter-frequency RACH reporting threshold";
  - 4> set the IE "Inter-frequency cell indication- SIB11" to the following value: Value\_Tag MOD 2, with Value\_Tag corresponding to the value tag of System Information Block Type 11;
  - 4> set the IE "Inter-frequency cell indication- SIB12" to any value.
- 1> for any other uplink RRC message which optionally includes the IE "Measured results on RACH":
  - 2> if the IE "Intra-frequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" are included in System Information Block type 12 (or "System Information Block Type 11", if these IEs are not included in the broadcast "System Information Block Type 12" or "System Information Block Type 12" is not being broadcast).
    - 3> include a measurement report in the IE "Measured results on RACH", as specified in the IE "Intrafrequency reporting quantity for RACH reporting" and the IE "Maximum number of reported cells on RACH" in System Information Block type 12 (or "System Information Block Type 11" if these IEs are not included in the broadcast "System Information Block Type 12" or "System Information Block Type 12" is not being broadcast).
  - 2> if the IE "Inter-frequency RACH reporting information" is included in "System Information Block type 12" (or "System Information Block Type 11" if this IE is not included in the "System Information Block Type 12" or if "System Information Block Type 12" is not being broadcast):
    - 3> if, at the time the message is to be sent, valid measurements are available; and
    - 3> there is one or more cells for which the quantity, indicated by the IE "Reporting quantity" in the IE "Interfrequency RACH reporting information", exceeds the threshold specified by the IE "Inter-frequency RACH reporting threshold":
      - 4> include a measurement report in the IE "Measured results on RACH";
      - 4> include the cells for which the quantity, indicated by the IE "Reporting quantity" in the IE "Interfrequency RACH reporting information", exceeds the threshold specified by the IE "Inter-frequency RACH reporting threshold";
      - 4> set the IE "Inter-frequency cell indication- SIB11" to the following value: Value\_Tag MOD 2, with Value\_Tag corresponding to the value tag of System Information Block Type 11;
      - 4> if "System Information Block Type 12" is being broadcast:
        - 5> set the IE "Inter-frequency cell indication- SIB12" to the following value: Value\_Tag MOD 2, with Value\_Tag corresponding to the value tag of System Information Block Type 12.
      - 4> else:
        - 5> set the IE "Inter-frequency cell indication- SIB12" to any value.
- 1> include in the IE "Measured results on RACH" all requested reporting quantities for cells for which measurements are reported.
  - NOTE: The UE only includes measurement results for neighbour cells for which valid measurements are available at the time the message is sent. At cell access following selection or reselection to a cell, the UE may not have had sufficient time to obtain valid measurement results for neighbour cells.
- 1> for messages transmitted on CCCH, take care that the maximum allowed message size is not exceeded when forming the IE "Measured results on RACH", i.e. limit the number of included neighbour cells or if required omit the IE "Measured results on RACH" altogether. When limiting the number of included neighbouring cells,

the number of inter-frequency cells should be limited first i.e. inter-frequency cells should be omitted before limiting the number of intra-frequency cells.

When transmitting an uplink RRC message and the System Information Block type 11, System Information Block type 11 bis and System Information Block type 12, if transmitted, have not been received, the UE shall:

- 1> for any uplink RRC message which optionally includes the IE "Measured results on RACH", include a measurement report in the IE "Measured results on RACH" according to the following rules:
  - 2> if the IE "Intra-frequency reporting quantity" was not present in System Information Block type 3:
    - 3> include a measurement report for the serving cell using CPICH RSCP as a measurement quantity;
    - 3> include measurement reports for cells on the used frequency for which measured results are available, using CPICH RSCP as measurement quantity for each cell;
    - 3> omit the IE "Measurement results for monitored cells on non-used frequencies".
  - 2> if the IE "Intra-frequency reporting quantity" was present in System Information Block type 3:
    - 3> include a measurement report for the serving cell using as a measurement quantity given in IE "Intrafrequency reporting quantity";
    - 3> include measurement reports for cells on the used frequency for which measured results are available, using as a measurement quantity given in IE "Intra-frequency reporting quantity" for each cell;
    - 3> omit the IE "Measurement results for monitored cells on non-used frequencies".
  - 2> for TDD, include measurement reports using the measurement quantities specified in the IE "Reporting quantity list".

If the IE "Measured results on RACH" is present in the message, the UTRAN should extract the contents to be used for radio resource control.

# 8.5.24 Change of PLMN while in RRC connected mode

If the UE camps on an acceptable cell to obtain limited service while in RRC connected mode the UE shall:

- 1> keep the RRC connection and its behaviour, while camping on an acceptable cell as if in Idle mode in that PLMN;
- 1> if the UE re-enters "in service area" in a suitable cell, or cannot maintain limited service (i.e. cannot find any acceptable cell of any PLMN), the UE shall resume its RRC Connected mode behaviour as if it had not camped on any cell whilst being in "out of service area".

#### The UE shall:

- 1> if the NAS indicates the selection of a new PLMN resulting from manual- or automatic mode PLMN selection [25] while the UE is in RRC connected mode; or
- 1> if the UE attempts transmission on an acceptable cell while the UE is in RRC connected mode (i.e. to initiate emergency call), the UE shall:
  - 2> move to idle mode;
  - 2> release all dedicated resources;
  - 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED\_RABS) to upper layers;
  - 2> clear the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS;
  - 2> clear the variable ESTABLISHED RABS; and
  - 2> perform actions specified in subclause 8.5.2 when entering idle mode from connected mode.

NOTE: NAS can inform AS about a new selected PLMN as a result of a PLMN selection (manual- or automatic mode PLMN selection (see [25])), or as a result of network signalling (after inter-RAT handover or inter-PLMN SRNS relocation). Only in the first case (manual- or automatic mode PLMN selection), this will result in an immediate RRC connection release.

### 8.5.25 Actions related to HS\_DSCH\_RECEPTION variable

The variable HS\_DSCH\_RECEPTION shall be set to TRUE only when all the following conditions are met:

- 1> for FDD and 1.28 Mcps TDD:
  - 2> the UE is in CELL DCH state.
- 1> for 3.84 Mcps TDD or 7.68 Mcps TDD:
  - 2> a dedicated physical channel is allocated to the UE in the uplink.
- 1> the variable H\_RNTI is set;
- 1> the UE has a stored IE "HS-SCCH info";
- 1> the UE has a stored IE "HARQ info";
- 1> for FDD:
  - 2> one of the radio links in the active set is configured as the serving HS-DSCH radio link;
  - 2> the UE has stored the following IEs:
    - IE "Measurement Feedback Info";
    - IE "Uplink DPCH Power Control Info" including stored  $\Delta_{ACK}$ ,  $\Delta_{NACK}$  and Ack-NACK Repetition factor.
- 1> for 3.84 Mcps TDD or 7.68 Mcps TDD, the UE has stored the IE "HS-PDSCH Timeslot Configuration" and either of the following conditions are met:
  - 2> a dedicated physical channel is allocated to the UE in the downlink;
  - 2> the UE has stored  $D_{hs-sync}$ .
- 1> for 1.28 Mcps TDD, the UE has stored the IE "HS-PDSCH Midamble Configuration" and either of the following conditions are met:
  - 2> a dedicated physical channel is allocated to the UE in the downlink;
  - 2> the UE has stored "PLCCH Info".
- 1> there is at least one RB mapped to HS-DSCH;
- 1> at least for one of the RBs mapped to HS-DSCH, there is either:
  - 2> at least one MAC-hs queue (including the IE "MAC-d PDU size Info") configured for the concerning MAC-d flow; or
  - 2> at least one MAC-ehs reordering queue configured for the associated logical channel.
- NOTE 1: For TDD and for FDD in CELL\_DCH, to enable or disable HS-DSCH reception, the UTRAN has the possibility to add/remove the concerning HS-DSCH related RB mapping options, add/remove the concerning MAC-d flows or, for FDD, add/remove the concerning MAC-ehs reordering queue, add/remove the serving HS-DSCH radio link or, for TDD add/remove H-RNTI upon hard handover.

NOTE 2: For TDD and for FDD in CELL\_DCH, if HS\_DSCH\_RECEPTION is set to TRUE and a reconfiguration, an inter-RAT handover from UTRAN, or a cell change order procedure is initiated, the UE checks the conditions only when the reconfiguration, inter-RAT handover from UTRAN, or cell change order procedure is successfully completed. Doing so ensures that, in case of failure in the reconfiguration, inter-RAT handover from UTRAN, or cell change order procedure, the UE can return to the old configuration as if the message was not received, e.g. without performing a MAC-HS reset.

If any of the above conditions is not met and the variable HS\_DSCH\_RECEPTION is set to TRUE, the UE shall:

- 1> set the variable HS\_DSCH\_RECEPTION to FALSE;
- 1> for TDD and for FDD in CELL DCH:
  - 2> set the variable HS\_DSCH\_RECEPTION\_GENERAL to FALSE;
  - 2> stop any HS\_SCCH reception procedures;
  - 2> stop any HS-DSCH reception procedures;
  - 2> clear the variable H\_RNTI and remove any stored H-RNTI;
  - 2> reset the MAC-hs/ehs entity [15];
  - 2> release all HARQ resources;
  - 2> no long consider any radio link to be the HS-DSCH serving radio link.
- 1> for 3.84 Mcps TDD or 7.68 Mcps TDD, if no downlink DPCH is assigned the UE shall clear the uplink DPCH configuration and initiate the Cell Update procedure according to subclause 8.3.1, cause "radio link failure".
- NOTE 3: If configured for HS-DSCH and not explicitly indicated as being cleared, the UE will have still stored the IEs "HARQ info", "Added or Reconfigured MAC-d flow", "Added or Reconfigured MAC-ehs reordering queue", "RB mapping Info" and "Downlink HS-PDSCH information".

Whenever the variable HS DSCH RECEPTION is set to TRUE, the UE shall:

- 1> set the variable HS DSCH RECEPTION GENERAL to TRUE;
- 1> perform HS\_SCCH reception procedures according to the stored HS-SCCH configuration as stated in:
  - 2> subclause 8.6.6.33 for the IE "HS-SCCH Info".
  - 2> for 1.28 Mcps TDD, when performing reception on signalling radio bearer before RAB has been established, the UE shall use the lowest HSDPA capability category, as specified in [35], to read the DL control information on HS-SCCH.
- NOTE 4: For 1.28 Mcps TDD, when performing transmission on signalling radio bearer before RAB has been established, UTRAN should use the lowest HSDPA capability category, as specified in [35], when performing scheduling and signalling the control information on HS-SCCH, as it is not possible for Node B to be aware of the UE's HSDPA capability category during this period.
- 1> perform HS-DSCH reception procedures according to the stored HS-PDSCH configuration as stated in:
  - 2> subclause 8.6.3.1b for the IE "H-RNTI";
  - 2> subclause 8.6.5.6b for the IE "HARQ info";
  - 2> subclause 8.6.6.34 for the IE "Measurement Feedback Info".
- 1> use the relevant CQI reporting table as stated in subclause 8.5.44.
- For TDD and for FDD in CELL DCH, whenever the variable HS DSCH RECEPTION is set to FALSE, the UE shall:
  - 1> not perform HS\_SCCH reception procedures;
  - 1> not perform HS-DSCH reception procedures.

## 8.5.26 Service prioritisation

If the UE detects an MBMS service reception inability as specified in subclause 8.5.30, the UE may:

- 1> request upper layers to prioritise the services and to initiate release of non- prioritised services that may cause interruption in the reception of the prioritised services;
- 1> if reception of the prioritised MBMS service is inhibited by one or more MBMS service(s) provided via a p-t-p radio bearer:
  - 2> request UTRAN to terminate these MBMS service(s) using the MBMS MODIFICATION REQUEST message as specified in subclause 8.7.6.

NOTE: The termination of MBMS services is performed by RRC procedures, while clearing of non-MBMS services is performed by upper layers.

## 8.5.27 MBMS frequency selection

The UE shall perform the MBMS frequency layer selection procedure upon receiving the IE "MBMS Preferred frequency information", when specified explicitly e.g. as in subclause 8.6.9.2, or when the priority for an MBMS service as indicated by upper layers changes.

The UE shall:

- 1> if there exist two or more preferred frequencies for services included in variable MBMS ACTIVATED SERVICES:
  - 2> request from upper layers the priorities of the different MBMS services included in variable MBMS\_ACTIVATED\_SERVICES for which a preferred frequency has been received.
- 1> if the UE is in idle mode:
  - 2> if a preferred frequency layer applies for a service included in variable MBMS\_ACTIVATED\_SERVICES:
    - 3> select the preferred frequency indicated for the MBMS service(s) prioritised most by upper layers for which a preferred frequency exists as the preferred frequency.
- 1> if the UE is in CELL\_FACH, CELL\_PCH or URA\_PCH state; and
- 1> if there exists one or more preferred frequencies for services included in variable MBMS\_ACTIVATED\_SERVICES and the variable MBMS\_PL\_SERVICE\_RESTRICTION\_INFO\_DEDICATED is set to FALSE:
  - 2> if the IE "RAB information" in the variable ESTABLISHED\_RABS is not empty:
    - 3> if the current frequency is the frequency corresponding with the preferred frequency indicated for the MBMS service(s) prioritised most by upper layers for which a preferred frequency exists:
      - 4> select the current frequency as the preferred frequency.
    - 3> else:
      - 4> if there exists one or more preferred frequencies for services included in variable MBMS\_ACTIVATED\_SERVICES for which the IE "MBMS PL Service Restriction Information" has not been received in the MBMS GENERAL INFORMATION message:
        - 5> select the preferred frequency indicated for the MBMS service(s) prioritised most by upper layers for which a preferred frequency exists for which the IE "MBMS PL Service Restriction Information" has not been received in the MBMS GENERAL INFORMATION message as the preferred frequency.

#### 2> else:

3> select the preferred frequency indicated for the MBMS service(s) prioritised most by upper layers for which a preferred frequency exists as the preferred frequency.

#### 1> if the UE is in CELL\_DCH:

- 2> if there exists one or more preferred frequencies for services included in variable MBMS\_ACTIVATED\_SERVICES and the variable MBMS\_PL\_SERVICE\_RESTRICTION\_INFO\_DEDICATED is set to FALSE:
  - 3> if the current frequency does not correspond to the preferred frequency indicated for the MBMS service(s) prioritised most by upper layers for which a preferred frequency exists:
    - 4> select as preferred frequency the preferred frequency indicated for the MBMS service(s) prioritised most by upper layers for which a preferred frequency exists for which the IE "MBMS PL Service Restriction Information" is not included in the MBMS GENERAL INFORMATION message;
    - 4> if a preferred frequency has been selected and the current frequency is different from the selected frequency:
      - 5> request UTRAN to be moved to the preferred frequency by means of the MBMS MODIFICATION REQUEST message as specified in subclause 8.7.6;
      - 5> if the variable MBMS PREV FREQUENCY INFO is empty:
        - 6> upon receiving a request to move to the requested preferred frequency, store the frequency information of the frequency on which the UE was operating prior to the hard-handover to the preferred frequency in the variable MBMS\_PREV\_FREQUENCY\_INFO.
- 1> if a preferred frequency has been selected:
  - 2> if the UE is not in CELL\_DCH state:
    - 3> apply the cell-reselection procedure as described in [4], using the received "MBMS Preferred frequency information" applicable to the selected frequency;
    - 3> if the UE re-selects to a cell on the indicated preferred frequency:
      - 4> if HCS is not used, and the IE "Qoffmbms" is not present for the MBMS preferred frequency:
        - 5> consider the cells on the MBMS preferred frequency having a Qoffmbms equal to "infinity".
      - 4> if HCS is used, and the IE "HCS\_OFFmbms" is not present for the MBMS preferred frequency:
        - 5> consider the cells on the MBMS preferred frequency having the highest HCS priority level.
      - 4> if the UE is in CELL\_FACH, CELL\_PCH or URA\_PCH:
        - 5> act according to subclause 8.3.1.2.
      - 4> if the selected frequency is different to the frequency on which the UE was previously operating; and
      - 4> if the variable MBMS\_PREV\_FREQUENCY\_INFO is empty:
        - 5> store the frequency information of the frequency on which the UE was operating prior to cell-reselection to the preferred frequency in the variable MBMS\_PREV\_FREQUENCY\_INFO.
      - 4> apply the MCCH acquisition procedure, as specified in subclause 8.7.2.

#### 1> else:

- 2> if the UE is not in CELL DCH state:
  - 3> stop applying any "MBMS Preferred frequency information".
  - 3> if the UE is not redirected to another frequency; and
  - 3> if the UE does not decide to receive an MBMS service; and
  - 3> if the variable MBMS\_PREV\_FREQUENCY\_INFO is not empty:

- 4> if any frequency in SIB11 or SIB12 has the same frequency stored in the variable MBMS\_PREV\_FREQUENCY\_INFO:
  - 5> select a suitable UTRA cell in that frequency;
  - 5> if no suitable UTRA cell in that frequency is found:
    - 6> select a suitable UTRA cell in another frequency.
- 4> if no frequency in SIB11 or SIB12 has the same frequency stored in the variable MBMS\_PREV\_FREQUENCY\_INFO:
  - 5> select a frequency randomly among the inter-frequencies indicated in SIB11 or SIB12:
    - 6> select a suitable UTRA cell in the selected frequency;
    - 6> if no suitable UTRA cell in the selected frequency is found:
      - 7> select a suitable UTRA cell in another frequency.
- 4> clear the variable MBMS PREV FREQUENCY INFO.

NOTE: The UE is only required to acquire the relevant SIB11 or SIB12, according to what is specified in subclauses 8.1.1.6.11 and 8.1.1.6.12.

## 8.5.28 Actions related to E\_DCH\_TRANSMISSION variable

The variable E\_DCH\_TRANSMISSION shall be set to TRUE only when all the following conditions are met:

- 1> the UE is in CELL\_DCH state;
- 1> the variable E\_RNTI includes either the Primary E-RNTI or the Secondary E-RNTI or both the Primary and the Secondary E-RNTI;
- 1> For FDD:
  - 2> the UE has stored the following IEs:
    - IE "E-DCH Transmission Time Interval";
    - IE "HARQ info for E-DCH";
    - IE "E-DCH info", including the IE "E-DPCCH info" and the IE "E-DPDCH info";
    - one of the radio links in the active set is configured as the serving E-DCH radio link, and for this radio link the UTRAN has configured the IE "E-HICH configuration" and the IE "E-AGCH info".

#### 1> For TDD:

- 2> for non-scheduled transmission, the UE has stored the following IEs:
  - IE "HARQ info for E-DCH";
  - IE "E-DCH information", including the IE "E-PUCH info";
  - IE "Non-scheduled transmission grant info".
- 2> for scheduled transmission, the UE has stored the following IEs:
  - IE "HARQ info for E-DCH";
  - IE "E-DCH information", including the IE "E-RUCCH info" and the IE "E-PUCH info";
  - IE "E-HICH info";
  - IE "E-AGCH info".

- 1> there is at least one logical channel mapped to E-DCH for which:
  - 2> the corresponding E-DCH MAC-d flow is configured, i.e. the IEs "E-DCH MAC-d flow power offset" and "E-DCH MAC-d flow maximum number of retransmissions", and the transmission grant type are configured.

If any of the above conditions is not met and the variable E\_DCH\_TRANSMISSION is set to TRUE, the UE shall:

- 1> set the variable E\_DCH\_TRANSMISSION to FALSE;
- 1> stop any E-AGCH and E-HICH reception procedures;
- 1> For FDD:
  - 2> stop any E-RGCH reception procedures.
- 1> For FDD:
  - 2> stop any E-DPCCH and E-DPDCH transmission procedures.
- 1> For TDD:
  - 2> stop any E-RUCCH and E-PUCH transmission procedures.
- 1> clear the variable E\_RNTI;
- 1> act as if the IE "MAC-es/e reset indicator" was received and set to TRUE;
- 1> release all E-DCH HARQ resources;
- 1> no longer consider any radio link to be the serving E-DCH radio link.

Whenever the variable E\_DCH\_TRANSMISSION is set to TRUE, the UE shall:

#### 1>For FDD:

- 2> perform E-AGCH reception procedures according to the stored E-AGCH configuration as stated in:
  - 3> subclause 8.6.3.14 for the IE "New Primary E-RNTI" and the IE "New Secondary E-RNTI".
- 2> perform E-HICH reception procedures for all radio links in the E-DCH active set;
- 2> perform E-RGCH reception procedures for all radio links in the active set for which an E-RGCH configuration has been provided;
- 2> perform E-DPCCH transmission procedures according to the stored E-DPCCH configuration as stated in:
  - 3> subclause 8.6.6.37 for the IE "E-DPCCH Info".
- 2> perform E-DPDCH transmission procedures according to the stored E-DPDCH configuration as stated in:
  - 3> subclause 8.6.5.16 for the IE "E-DCH Transmission Time Interval";
  - 3> subclause 8.6.5.17 for the IE "HARQ info for E-DCH";
  - 3> subclause 8.6.6.37 for the IE "E-DPDCH Info".
- 2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:
  - 3> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18).
- 2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:
  - 3> be performed in accordance with the received scheduling grant on E-AGCH/E-RGCH (see [15]); and
  - 3> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37).

#### 1>For TDD:

- 2> if scheduled transmission is configured, perform E-AGCH reception procedures according to the stored E-AGCH configuration as stated in:
  - 3> subclause 8.6.3.14 for the IE "New Primary E-RNTI".
- 2> Perform E-HICH reception;
- 2> for 3.84/7.68 Mcps TDD, perform E-RUCCH transmission procedures according to the stored E-RUCCH configuration as stated in:
  - 3> subclause 8.6.6.37 for the IE "E-RUCCH Info".
- 2> for 1.28 Mcps TDD, if scheduled transmission is configured, perform E-RUCCH transmission procedure according to the stored PRACH configuration (see [60]) and the stored E-RUCCH configuration as stated in:
  - 3> subclause 8.6.6.37 for the IE "E-RUCCH Info".
- NOTE 1: The PRACH configuration is signalled directly to the UE in "E-RUCCH Info" IE in case of E-DCH serving cell change.
  - 2> Perform E-PUCH transmission procedures according to the stored E-PUCH configuration as stated in:
    - 3> subclause 8.6.6.37 for the IE "E-PUCH Info".
  - 2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Non-scheduled transmission grant info" is configured shall:
    - 3> obey the scheduling and size restrictions as specified for that MAC-d flow (see subclause 8.6.5.18).
  - 2> inclusion of MAC-d PDU's in a MAC-e PDU for logical channels belonging to a MAC-d flow for which the IE "Scheduled transmission grant info" is configured shall:
    - 3> be performed in accordance with the received scheduling grant on E-AGCH (see [15]); and
    - 3> obey the scheduling restrictions as specified for scheduled transmissions (see subclause 8.6.6.37).
  - 2> obtain and format the appropriate information on E-UCCH (see [15]). For 1.28 Mcps TDD, when performing transmission on signalling radio bearer before RAB has been established, the UE shall use the lowest E-DCH capability category, as specified in [35], to signal the UL control information on E-UCCH.
- NOTE 2: For 1.28 Mcps TDD, when performing transmission on signalling radio bearer before RAB has been established, UTRAN should use the lowest E-DCH capability category when performing configuration, scheduling and reading the control information on E-UCCH, as it is not possible for Node B to be aware of the UE's E-DCH capability category during this period.

Whenever the variable E\_DCH\_TRANSMISSION is set to FALSE, the UE shall:

- 1> not perform E-AGCH, E-HICH and/or E-RGCH reception procedures;
- 1> not perform E-DPCCH, E-DPDCH, E-RUCCH and/or E-PUCH transmission procedures.

# 8.5.29 MBMS modification period identity calculation

The UE shall calculate the identity of a Modification period as follows:

MP identity= (SFNMP div MPlen) mod 2

With SFN<sub>MP</sub> being the SFN corresponding with the frame in which the concerned Modification Period starts

 $MP_{len}$  being the length of the Modification Period, that is indicated by the IE "Modification period coefficient" that is included in System Information Block type 5 and 5bis.

## 8.5.30 Detecting MBMS service reception inability

The UE may detect that it becomes incapable of receiving all services it is interested in at any time due to implementation specific constraints as well as upon state transitions, service / session start, service / session stop, service reconfiguration e.g. transfer mode change and preferred frequency layer changes or whenever there are changes concerning the subset of services that it has selected to receive.

When evaluating its MBMS service reception abilities, the UE shall:

- 1> consider that MBMS services, for which a preferred frequency layer is specified, are available only on the concerned frequency;
- 1> consider that MBMS services, for which no preferred frequency layer is specified are available on all frequencies;
- 1> consider non-MBMS services to be available on all frequencies unless specified otherwise in the following;
- 1> if the variable MBMS\_PL\_SERVICE\_RESTRICTION\_INFO\_DEDICATED is set to TRUE:
  - 2> consider the established non-MBMS services not to be available on any MBMS preferred frequency.
- 1> if the IE "MBMS PL Service Restriction Information" is included in the MBMS GENERAL INFORMATION message for the MBMS preferred frequency the UE is considering to select to:
  - 2> consider non-MBMS services not to be available on the concerned MBMS preferred frequency.

If the UE is unable to receive the MBMS and the non-MBMS services it is interested in, the UE shall:

1> detect an MBMS service reception inability.

## 8.5.31 Actions related to DEFERRED\_MEASUREMENT\_STATUS variable

If after state transition the UE remains in a state other than CELL\_DCH state, the UE shall:

- 1> if variable DEFERRED\_MEASUREMENT\_STATUS is set to TRUE:
  - 2> if System Information Block type 11 is referenced in the master information block or in the scheduling blocks:
    - 3> if the UE has not read and stored System Information Block type 11:
      - 4> read and store System Information Block type 11.
    - 3> if System Information Block type 11bis is referenced in the master information block or in the scheduling blocks:
      - 4> if the UE has not read and stored System Information Block type 11:
        - 5> read and store System Information Block type 11.
  - 2> if System Information Block type 12 is referenced in the master information block or in the scheduling blocks, or broadcast of System Information Block type 12 is indicated in System Information Block type 11:
    - 3> if the UE has not read and stored System Information Block type 12:
      - 4> read and store System Information Block type 12.

## 8.5.32 Actions related to MIMO PARAMS variable

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

- 1> if the IE "MIMO parameters" is not included:
  - 2> clear the MIMO\_PARAMS variable;

- 2> trigger lower layers to stop operation in MIMO mode.
- 1> otherwise:
  - 2> if the IE "MIMO N\_cqi\_typeA/M\_cqi ratio" is included:
    - 3> store the value of the IE "MIMO N\_cqi\_typeA/M\_cqi ratio" in the MIMO\_PARAMS variable.
  - 2> if the IE "MIMO pilot configuration" is included:
    - 3> store the value of the IE "MIMO pilot configuration" in the MIMO\_PARAMS variable.
  - 2> if the IE "MIMO operation" is set to "start":
    - 3> if the IE "Precoding weight set restriction" is included:
      - 4> store the value of the IE "Precoding weight set restriction" in the MIMO\_PARAMS variable. In addition, it shall be indicated to lower layers that precoding weight set restriction is configured.
    - 3> else:
      - 4> clear the value of the IE "Precoding weight set restriction" in the MIMO\_PARAMS variable. In addition, it shall be indicated to lower layers that precoding weight set restriction is not configured.
  - 2> else if the IE "MIMO operation" is set to "continue":
    - 3> if the IE "Precoding weight set restriction" is included:
      - 4> if the IE "Precoding weight set restriction" is already stored in the variable MIMO\_PARAMS before receiving this message:
        - 5> continue using "Precoding weight set restriction" for MIMO operation.
      - 4> else:
        - 5> UE behaviour is undefined.
    - 3> else:
      - 4> if the IE "Precoding weight set restriction" is already stored in the variable MIMO\_PARAMS before receiving this message:
        - 5> continue using "Precoding weight set restriction" for MIMO operation.
      - 4> else:
        - 5> continue MIMO operation without using "Precoding weight set restriction".

NOTE: This subclause applies to FDD only.

## 8.5.33 Actions related to MIMO\_STATUS variable

If the UE receives an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the UE shall:

- 1> take actions related to the MIMO\_PARAMS variable as specified in subclause 8.5.32;
- 1> determine the value of the MIMO\_STATUS variable.

The MIMO\_STATUS variable shall be set to TRUE only when all the following conditions are met:

- 1> The UE is in CELL DCH state;
- 1> the variable HS\_DSCH\_RECEPTION is set to TRUE;
- 1> the variable MIMO\_PARAMS contains a value for the IE "MIMO N\_cqi\_typeA/M\_cqi ratio"; and

1> the variable MIMO\_PARAMS contains a value for the IE "MIMO pilot configuration".

If any of the above conditions is not met and the MIMO\_STATUS variable is set to TRUE, the UE shall:

- 1> set the MIMO STATUS variable to FALSE;
- 1> clear the MIMO PARAMS variable;
- 1> trigger lower layers to stop operation in MIMO mode.

If the MIMO\_STATUS variable is set to FALSE:

- 1> if prior to receiving an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the MIMO\_STATUS variable was set to TRUE:
  - 2> if the IE "HARQ info" is not included in the received message:
    - 3> the UE behaviour is unspecified.

If the MIMO\_STATUS variable is set to TRUE:

- 1> if prior to receiving an ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message, the MIMO\_STATUS variable was set to FALSE:
  - 2> if the IE "HARQ info" is not included in the received message:
    - 3> the UE behaviour is unspecified.

NOTE: This subclause applies to FDD only.

## 8.5.34 Actions related to DTX\_DRX\_STATUS variable (FDD only)

If the UE receives RRC CONNECTION SETUP, ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message:

1> the UE shall determine the value for the DTX\_DRX\_STATUS variable.

The variable DTX\_DRX\_STATUS shall be set to TRUE only when all the following conditions are met:

- 1> the UE is in CELL DCH state;
- 1> both variables HS DSCH RECEPTION and E DCH TRANSMISSION are set to TRUE;
- 1> no DPDCH is present in uplink and F-DPCH is configured in downlink;
- 1> the variable DTX\_DRX\_PARAMS is set;
- 1> the IE "DTX-DRX timing information" is included in the received message.

If any of the above conditions is not met and the variable DTX\_DRX\_STATUS is set to TRUE, the UE shall:

- 1> set the variable DTX\_DRX\_STATUS to FALSE;
- 1> clear the variable DTX\_DRX\_PARAMS;
- 1> stop DTX-DRX mode related activities.

NOTE: If the uplink slot format is not changed by the received RRC message, the UE keeps using the same uplink slot format currently configured.

If the variable DTX\_DRX\_STATUS is set to true and the serving HS-DSCH cell was changed as a result of the received message the UE shall instruct the physical layer to consider that the HS-SCCH orders were never received.

If the variable DTX\_DRX\_STATUS is set to TRUE, the value of IE "DTX-DRX timing information" included in the message is "Continue" and the serving HS-DSCH cell was not changed as a result of the received message, the UE shall instruct the physical layer to consider that the DTX, DRX related HS-SCCH orders were received.

Whenever the variable DTX\_DRX\_STATUS is set to TRUE after receiving this message and the value of IE "DTX-DRX timing information" included in this message is not "Continue", the UE shall:

- 1> if the variable DTX\_DRX\_STATUS was set to TRUE before receiving this message:
  - 2> re-configure the physical layer to perform discontinuous uplink DPCCH transmission and enable or disable discontinuous downlink reception operations according to the variable DTX\_DRX\_PARAMS at the CFN corresponding to the frame boundary that is offset by the value of the IE "Enabling Delay" from the frame boundary where uplink transmission starts with the new configuration;
  - 2> let the MAC layer continue any current restriction on E-DCH transmission and monitoring of absolute and relative grant channels from the frame boundary where the uplink transmission starts with the new configuration and for the duration of the IE "Enabling Delay".
- NOTE: Whenever the variable DTX\_DRX\_STATUS is set to TRUE before and after receiving the message, the value of IE "DTX-DRX timing information" included in the message is not "Continue" and the serving HS-DSCH cell was not changed as a result of this message, the UE may or may not instruct the physical layer to consider that the DTX, DRX related HS-SCCH orders were never received.

#### 1> else:

- 2> perform discontinuous uplink DPCCH transmission and enable discontinuous downlink reception operations by configuring the physical layer according to the variable DTX\_DRX\_PARAMS at the CFN corresponding to the frame boundary that is offset by the value of the IE "Enabling Delay" from the frame boundary where the uplink transmission starts with the new configuration.
- 1> configure the MAC layer to start restricting E-DCH transmissions and monitor absolute and relative grant channels at the CFN corresponding to the frame boundary that is offset by the value of IE "Enabling Delay" from the frame boundary where the uplink transmission starts with the new configuration taking into account the IEs "UE DTX DRX Offset", "MAC DTX Cycle", "MAC Inactivity Threshold" and "Inactivity Threshold for UE Grant Monitoring".
- NOTE: If a post-verification period is configured [29], then the uplink transmission starts when the physical channel establishment is initiated by the UE. If a post-verification period is configured and the post-verification procedure fails then uplink transmission (re)starts when the downlink physical channel is established and the enabling delay timer is (re)started. If a post-verification period is not configured, the uplink transmission starts when the downlink physical channel is established.

# 8.5.35 Actions related to HS\_SCCH\_LESS\_STATUS variable (FDD only)

If the UE receives RRC CONNECTION SETUP, ACTIVE SET UPDATE, CELL UPDATE CONFIRM, or any reconfiguration message;

1> the UE shall determine the value for the HS\_SCCH\_LESS\_STATUS variable.

The variable HS\_SCCH\_LESS\_STATUS shall be set to TRUE only when all the following conditions are met:

- 1> the UE is in CELL\_DCH state;
- 1> the variable HS\_DSCH\_RECEPTION is set to TRUE;
- 1> no DPDCH is present in uplink and F-DPCH is configured in downlink;
- 1> the UE is not configured in MIMO mode;
- 1> the variable HS\_SCCH\_LESS\_PARAMS is set;
- 1> the IE "HS-SCCH less information" is included in the received message.

If any of the above conditions is not met and the variable HS\_SCCH\_LESS\_STATUS is set to TRUE the UE shall:

- 1> set the variable HS\_SCCH\_LESS\_STATUS to FALSE;
- 1> clear the variable HS\_SCCH\_LESS\_PARAMS;

1> stop all HS-SCCH less related activities.

Whenever the variable HS\_SCCH\_LESS\_STATUS is set to TRUE, the UE shall:

- 1> configure the physical and MAC layers to operate according to the HS\_SCCH\_LESS\_PARAMS;
- 1> configure the physical layer to use a virtual IR buffer size of at least 4536 bits for HS-SCCH less HS-DSCH transmissions.

# 8.5.36 Actions related to HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE variable (FDD only)

The variable HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE shall be set to TRUE only when all the following conditions are met:

- 1> the UE is in CELL FACH;
- 1> the variable H RNTI is set;
- 1> the variable C\_RNTI is set;
- 1> the UE has stored the IE "Added or reconfigured MAC-ehs reordering queue";
- 1> System Information Block type 5 or System Information Block type 5bis includes IE "HS-DSCH common system information".

If any of the above conditions is not met and the variable HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE is set to TRUE, the UE shall:

- 1> set the variable HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE to FALSE;
- 1> if the UE is in CELL\_FACH and variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED is set to FALSE:
  - 2> set the variable HS\_DSCH\_RECEPTION\_GENERAL to FALSE;
  - 2> stop any HS\_SCCH reception procedures;
  - 2> stop any HS-DSCH reception procedures;
  - 2> clear the variable H\_RNTI and remove any stored H-RNTI;
  - 2> reset the MAC-ehs entity [15];
  - 2> release all HARQ resources;
  - 2> clear any stored IEs "HARQ info";

Whenever the variable HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE is set to TRUE, the UE shall:

- 1> set the variable HS\_DSCH\_RECEPTION\_GENERAL to TRUE;
- 1> use the IE "HS-DSCH common system information" in System Information Block type 5 or System Information Block type 5 bis;
- 1> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving cell applying the scrambling code as received in the IE "DL Scrambling code" as received in IE "HS-DSCH common system information";
- 1> determine the "Total number of soft channel bits" (defined in Table 5.1a of [35]) according to subclause 8.1.6.2 and use it in the physical layer;
- 1> use the octet aligned HS-DSCH transport block table [15] in the MAC-ehs entity;
- 1> perform HS-DSCH reception procedures for DCCH or DTCH:
  - 2> if the UE has a stored IE "HARQ info":

- 3> act on subclause 8.6.5.6b for the stored IE "HARQ info".
- 2> else:
  - 3> act on subclause 8.6.5.20 for the IE "HARQ System info" as received in IE "HS-DSCH common system information".
- 2> and use the value of the variable H\_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer;
- 2> configure the MAC-ehs reordering queues according to IE "Added or reconfigured MAC-ehs reordering queue" as defined in subclauses 8.6.5.23;
- 1> and for BCCH reception perform HS-DSCH reception procedures by listening to the first indexed HS-SCCH code listed in the IE "HS-SCCH channelisation code" with "BCCH specific H-RNTI" as received in IE "HS-DSCH common system information".

Whenever the variable HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE is set to FALSE, the UE shall:

- 1> if the UE is in CELL\_FACH and variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED is set to FALSE:
  - 2> not perform HS\_SCCH reception procedures;
  - 2> not perform HS-DSCH reception procedures.

# 8.5.37 Actions related to HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED variable (FDD only)

When UE does not support HS-DSCH reception in CELL\_FACH state or when the IE "HS-DSCH common system information" is not included in System Information Block type 5 or System Information Block type 5bis, the UE shall:

- 1> set HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED to FALSE;
- 1> set the variable HS\_DSCH\_RECEPTION\_GENERAL to FALSE.

When HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED is set to TRUE, the UE shall:

- 1> set the variable HS\_DSCH\_RECEPTION\_GENERAL to TRUE;
- 1> use the IE "HS-DSCH common system information" in System Information Block type 5 or System Information Block type 5 bis;
- 1> configure the physical layer to use the "Total number of soft channel bits" (defined in Table 5.1a of [35]) for category 12 for HS-DSCH reception;
- 1> use the octet aligned HS-DSCH transport block table [15] in the MAC-ehs entity;
- 1> configure the HARQ according to IE "HARQ System info" as defined in subclause 8.6.5.20;
- 1> configure the common MAC-ehs reordering queues according to IE "Common MAC-ehs reordering queues" as defined in subclauses 8.6.5.22; and then
- 1> receive the CCCH according to IE "CCCH mapping info" as defined in subclause 8.6.5.21;
- 1> if the UE is RRC Connected mode:
  - 2> select a common H-RNTI as specified in 8.5.38;
  - 2> receive the SRB1 according to IE "SRB1 mapping info" as defined in subclause 8.6.5.19.
- 1> else:
  - 2> select a common H-RNTI as specified in [4].
- 1> and start to receive the HS-SCCH(s) with selected H-RNTI according to the IE "HS-SCCH channelisation code" on the selected cell applying the scrambling code as received in the IE "DL Scrambling code";

- 1> configure the MAC flow for BCCH reception as specified in [15];
- 1> and start to receive the first indexed HS-SCCH code listed in the IE "HS-SCCH channelisation code" with "BCCH specific H-RNTI" as received in IE "HS-DSCH common system information".

## 8.5.37a Actions related to HS\_DSCH\_RECEPTION\_GENERAL

For CELL\_FACH state, when UE does not support HS-DSCH reception in CELL\_FACH state or when the IE "HS-DSCH common system information" or for CELL\_PCH,URA PCH when the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state or the IE "HS-DSCH paging system information" is not included in System Information Block type 5 or System Information Block type 5bis, the UE shall:

- 1> if the variable HS\_DSCH\_RECEPTION\_GENERAL is set to TRUE:
  - 2> set the variable HS\_DSCH\_RECEPTION\_GENERAL to FALSE;
  - 2> stop any HS\_SCCH reception procedures;
  - 2> stop any HS-DSCH reception procedures;
  - 2> clear the variable H\_RNTI and remove any stored H-RNTI;
  - 2> reset the MAC-ehs entity [15];
  - 2> release all HARQ resources;
  - 2> clear any stored IEs "HARQ info".

## 8.5.38 Common H-RNTI selection (FDD only)

When the IE "Common H-RNTI Information" is included in System Information Block type 5 or System Information Block type 5 bis and if the UE is in CELL\_FACH state, the UE shall select the Common H-RNTI according to the following rules:

- 1> compile a list of candidate Common H-RNTI IE(s) "Common H-RNTI" in the order of appearance in System Information Block type 5 or System Information Block type 5bis;
- 1> select a Common H-RNTI from the list of candidate Common H-RNTIs based on U-RNTI as follows:

"Index of selected Common H-RNTI" = U-RNTI mod K,

where K is equal to the number of candidate Common H-RNTIs.

The UE shall set the CFN in relation to the SFN of the current cell according to subclause 8.5.15.

# 8.5.39 PICH selection for HSDPA based paging (FDD only)

When the IE "HS-DSCH paging system information" is included in System Information Block type 5 or System Information Block type 5bis and the UE is in UTRAN in CELL\_PCH or URA\_PCH state, the UE shall select the PICH according to the following rules:

- 1> compile a list of candidate PICH for HSDPA from IE(s) "HSDPA associated PICH info" in the order of appearance in System Information Block type 5 or System Information Block type 5bis;
- 1> select a PICH from the list of candidate PICHs based on U-RNTI as follows:

"Index of selected HSDPA associated PICH" = U\_RNTI value mod K,

where K is equal to the number of candidate PICHs for HSDPA.

## 8.5.40 HS\_DSCH Reception in CELL\_PCH and URA\_PCH (FDD only)

When the IE "HS-DSCH paging system information" is included in System Information Block type 5 or System Information Block type 5bis and the UE supports HS-DSCH reception in CELL\_PCH and URA\_PCH state and the UE is in CELL\_PCH or URA\_PCH state, the UE shall:

- 1> set the variable HS\_DSCH\_RECEPTION\_GENERAL to TRUE;
- 1> use the octet aligned HS-DSCH transport block table [15] in the MAC-ehs entity;
- 1> if variable H\_RNTI and variable C\_RNTI are set and the UE is in CELL\_PCH state:
  - 2> determine the "Total number of soft channel bits" (defined in Table 5.1a of [35]) according to subclause 8.1.6.2 and use it in the physical layer;
  - 2> for DCCH or DTCH reception:
    - 3> use the value of the variable H\_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.
  - 2> for BCCH reception:
    - 3> perform HS-DSCH reception procedures by listening to the first indexed HS-SCCH code listed in the IE "HS-SCCH channelisation code" with "BCCH specific H-RNTI" as received in IE "HS-DSCH common system information" from System Information Block type 5 or System Information Block type 5bis.
  - 2> if the UE detects the value of the variable H\_RNTI in the HS-SCCH reception procedure:
    - 3> initiate the measurement report procedure as specified in subclause 8.4.2;
    - 3> move to CELL\_FACH;
    - 3> start to receive HS-DSCH according to the procedure in subclause 8.5.36;
    - 3> stop timer T319 if it is running;
    - 3> restart the timer T305 if it is set to any value other than "infinity".
  - 2> if the UE has uplink RLC data PDU or uplink RLC control PDU on RB1 or upwards to transmit:
    - 3> initiate the measurement report procedure as specified in subclause 8.4.2:
    - 3> move to CELL\_FACH state;
    - 3> start to receive HS-DSCH according to the procedure in subclause 8.5.36;
    - 3> stop timer T319 if it is running;
    - 3> restart the timer T305 if it is set to any value other than "infinity".

#### 1> else:

- 2> if variable H\_RNTI or variable C\_RNTI are set, or if the UE is in URA\_PCH state:
  - 3> clear the variable H RNTI;
  - 3> clear the variable C RNTI;
  - 3> clear any stored IE "HARQ Info";
  - 3> reset the MAC-ehs entity [15].
- 2> perform the HS-DSCH reception procedure according to IE "HS-DSCH paging system information" as received in System Information Block type 5 or System Information Block type 5bis, receive the HS-PDSCH applying:
  - 3> a scrambling code as received in the IE "DL Scrambling code";

- 3> a channelisation code selected according to 8.5.41 in "Number of PCCH transmissions" consecutive TTIs;
- 3> the Transport block sizes indexed in the IE "Transport Block Size List" for demultiplexing of upper layer PDUs from transport blocks delivered from the physical layer on HS-DSCH, as described in [29]; and
- 3> configure the physical layer to use the "Total number of soft channel bits" (defined in Table 5.1a of [35]) for category 12 for HS-DSCH reception.

# 8.5.41 HS-PDSCH channelisation codes selection for paging reception (FDD only)

When the IE "HS-DSCH paging system information" is included in System Information Block type 5 or System Information Block type 5bis and the UE is in UTRAN in CELL\_PCH or URA\_PCH state with variable H\_RNTI not set, the UE shall select the channelisation code for HS-PDSCH reception according to the following rules:

- 1> compile a list of candidate HS-PDSCH channelisation codes from the IE(s) "HS-PDSCH Channelisation Code" in the order of appearance in System Information Block type 5 or System Information Block type 5bis;
- 1> select a HS-PDSCH channelisation codes from the list of candidate HS-PDSCH channelisation codes based on U-RNTI as follows:

"Index of selected HS-PDSCH channelisation codes" = U\_RNTI value mod K,

where K is equal to the number of candidate HS-PDSCH channelisation codes.

## 8.5.42 Autonomous UTRAN DRX Cycle length coefficient change

If timer T319 expires:

- 1> set k to the value of the stored IE "DRX cycle length coefficient";
- 1> store the result of MAX(2<sup>k</sup>,PBP), where PBP is the Paging Block Periodicity, as the DRX cycle length; and
- 1> determine its connected mode paging occasions and PICH monitoring occasions in the same way as for idle mode, according to [4].

NOTE: The DRX cycle length to use in connected mode is defined in [4].

# 8.5.43 Reception of MBMS from a cell operating in MBSFN mode

A cell provides MBMS service in MBSFN mode if it is indicated so in system information, see subclause 8.1.1.6.3. A UE that supports MBSFN operation may receive MBMS services via a cell operating in MBSFN mode. For FDD and 3.84/7.68 Mcps TDD in order to receive an MBMS service via a MBSFN cluster the UE shall select the MBSFN cluster as specified in [4] in addition to selecting a cell for normal camping as specified in [4]. For 1.28 Mcps TDD in order to receive an MBMS service via an MBSFN cluster the UE shall at the first step camp on a unicast cell and get the frequency and "cell parameter ID" from the system information, and then get synchronized to the MBSFN cluster operating with that frequency and "cell parameter ID". For 3.84/7.68 Mcps TDD a cell shall be considered to be operating in MBSFN mode when individual scrambling codes are assigned to all timeslots (via the IE "TDD MBSFN Information").

# 8.5.44 HS-DSCH CQI reporting tables

If the variable HS\_DSCH\_RECEPTION is set to "TRUE", the UE shall:

- 1> if the UE has been configured with at least one MAC-ehs reordering queue:
  - 2> use the relevant CQI tables, as defined in [29], for the HS-DSCH category indicated by the IE "HS-DSCH physical layer category extension" stored in the variable UE\_CAPABILITY\_TRANSFERRED. For 1.28 Mcps TDD, use the table of transport block size, as defined in [15], for the HS-DSCH category indicated by the IE "HS-DSCH physical layer category extension" stored in the variable UE CAPABILITY TRANSFERRED

#### 1> otherwise:

2> use the relevant CQI tables, as defined in [29], for the HS-DSCH category indicated by the IE "HS-DSCH physical layer category" stored in the variable UE\_CAPABILITY\_TRANSFERRED. For 1.28 Mcps TDD, use the table of transport block size, as defined in [15], for the HS-DSCH category indicated by the IE "HS-DSCH physical layer category" stored in the variable UE\_CAPABILITY\_TRANSFERRED

# 8.6 Generic actions on receipt and absence of an information element

#### 8.6.1 CN information elements

#### 8.6.1.1 Void

#### 8.6.1.2 CN information info

If the IE "CN information info" is present in a message, the UE shall:

- 1> if the IE "Primary PLMN Identity" is present:
  - 2> forward the content of the IE "Primary PLMN identity" to upper layers.
- 1> else:
  - 2> if the IE "PLMN Identity" is present:
    - 3> forward the content of the IE "PLMN identity" to upper layers.
- 1> if present, forward the content of the IE "CN common GSM-MAP NAS system information" to upper layers;
- 1> if the IE "CN domain related information" is present:
  - 2> forward each occurrence of the IE "CN domain specific GSM-MAP NAS system info" together with the IE "CN domain identity" to upper layers.
  - 2> if an IE "CN domain specific GSM-MAP NAS system info" is not present for a particular CN domain:
    - 3> indicate to upper layers that no CN system information is available for that CN domain.

NOTE: If UTRAN at SRNS relocation includes and sets the IE "Primary PLMN identity" to the PLMN identity signalled in RANAP RELOCATION REQUEST [57], the UTRAN should also set the IE "PLMN identity" to the PLMN identity in the IE "PLMN Identity" of the Master Information Block transmitted in the cell(s) used by the UE after completed SRNS relocation.

#### 8.6.1.3 Signalling connection release indication

If the IE "Signalling Connection release indication" is present in a message, the UE shall:

- 1> if all radio access bearers for the CN domain identified with the value of the IE "Signalling Connection release indication" would have been released in the variable ESTABLISHED\_RABS after processing of the received message:
  - 2> indicate release of the signalling connection identified with the value of the IE "Signalling Connection release indication" to the upper layers;
  - 2> remove the signalling connection identified with the value of the IE "Signalling Connection release indication" from the variable ESTABLISHED\_SIGNALLING\_CONNECTIONS.
- 1> if radio access bearers for the CN domain identified with the value of the IE "Signalling Connection release indication" would remain in the variable ESTABLISHED\_RABS after processing of the received message:

2> set the variable INVALID\_CONFIGURATION to TRUE.

## 8.6.2 UTRAN mobility information elements

#### 8.6.2.1 URA identity

The UE shall:

- 1> if the IE "URA identity" is included in a received message:
  - 2> if the IE "RRC State Indicator" is included and set to "URA\_PCH":
    - 3> store this URA identity in the variable URA\_IDENTITY;
    - 3> after sending a possible message to UTRAN and entering URA\_PCH state as specified elsewhere, read system information block type 2 in the selected cell;
    - 3> if the stored URA identity in the variable URA\_IDENTITY is not included in the list of URA identities in System Information Block type 2 in the selected cell, the list of URA identities in system information block type 2 is empty or if the system information block type 2 can not be found, a confirmation error of URA identity list has occurred:
      - 4> if no URA update procedure is ongoing:
        - 5> initiate a URA update procedure after entering URA\_PCH state; see subclause 8.3.1.2.
      - 4> if a URA update procedure is ongoing:
        - 5> take actions as specified in subclause 8.3.1.10.
- 1> if the IE "URA identity" is not included in a received message:
  - 2> if the IE "RRC State Indicator" is included and set to " URA\_PCH":
    - 3> after sending a possible message to UTRAN and entering URA\_PCH state as specified elsewhere, read System Information Block type 2 in the selected cell;
    - 3> if System Information Block type 2 in the selected cell contains a single URA identity:
      - 4> store this URA identity in the variable URA\_IDENTITY.
    - 3> if System Information Block type 2 of the selected cell contains more than one URA identity, the list of URA identities in system information block type 2 is empty or if the system information block type 2 can not be found, a confirmation error of URA identity list has occurred:
      - 4> if no URA update procedure is ongoing:
        - 5> initiate a URA update procedure after entering URA PCH state, see subclause 8.3.1.2.
      - 4> if a URA update procedure is ongoing:
        - 5> take actions as specified in subclause 8.3.1.10.

#### 8.6.2.2 Mapping info

For FDD, 3.84 Mcps TDD and 7.68 Mcps TDD, if the IE "Mapping info" is received, the UE shall in this version of the specification:

1> ignore the contents of this IE.

For 1.28 Mcps TDD, if the IE "Mapping info" is received, the UE shall:

1> if the IE "Map parameter 1" is included, interpret the IE "Map parameter 1" as IE "UpPCH Position Info":

- 2> store and use the UpPCH position indicated by the IE "UpPCH Positon Info". The calculation of the uplink access position is described in [33].
- 1> if the IE "Map parameter 1" is not included:
  - 2> use the UpPTS as the default UpPCH position.
- 1> ignore other contents of the IE "Mapping info".

#### 8.6.2.3 RNC support for change of UE capability

The UE shall:

- 1> if the IE "RNC support for change of UE capability" is included in a received message:
  - 2> set the variable RNC\_CAPABILITY\_CHANGE\_SUPPORT to the value of the IE "RNC support for change of UE capability".

#### 8.6.3 UE information elements

#### 8.6.3.1 Activation time

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is other than the default value "Now", the UE shall:

- 1> let the "reference CCTrCH" be defined as the CCTrCh that includes any transport channel or is associated with any physical channel which is being added, re-configured or removed, or, in the case of HS-DSCH, the CCTrCh including the associated DCH;
- 1> if the frame boundary immediately before the frame with the CFN (Connection Frame Number) value indicated by the IE "Activation Time" is at the TTI boundary common to all the transport channels that are multiplexed onto the reference CCTrCh:
  - 2> select that frame boundary as the activation time T.

#### 1> else:

- 2> select the next TTI boundary, which is common to all the transport channels that are multiplexed onto the reference CCTrCh, after the frame with the CFN (Connection Frame Number) value indicated by the IE "Activation Time", as the activation time T.
- 1> if the IE "Delay restriction flag" is received and activation time T is more than 128 frames from the CFN at which the message was received:
  - 2> choose an activation time T as soon as possible after reception of the message, respecting the performance requirements in subclause 13.5, which is common to all the transport channels that are multiplexed onto the reference CCTrCh.
- NOTE: If the UE receives a message containing the IE "Delay restriction flag" and that message causes a transport channel or physical channel reconfiguration of the reference CCTrCH then the UE behaviour is not specified.
- 1> at the activation time T:
  - 2> for a physical channel reconfiguration other than an HS-DSCH related reconfiguration, caused by the received message:
    - 3> release the physical channel configuration, which was present before T;
    - 3> initiate the establishment of the physical channel configuration as specified for the physical channel information elements in the received message as specified elsewhere.
  - 2> for an HS-DSCH related reconfiguration in FDD or 1.28 Mcps TDD caused by the received message:

- 3> select the HS-SCCH subframe boundary immediately before the first HS-SCCH subframe, which entirely falls within the 10 ms frame following T;
- 3> start using, at that HS-SCCH subframe boundary, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.
- 2> for an HS-DSCH related reconfiguration in 3.84 Mcps TDD or 7.68 Mcps TDD caused by the received message:
  - 3> start using, at activation time T, the new HS-DSCH configuration in the received message, replacing any old HS-DSCH configuration.
- 2> for actions, other than a physical channel reconfiguration, caused by the received message:
  - 3> perform the actions for the information elements in the received message as specified elsewhere.
- NOTE: In FDD an "HS-DSCH related reconfiguration" includes, in particular, reconfigurations that need to be time-aligned with the 2ms subframe of the HS-SCCH, HS-PDSCH and/or HS-DPCCH. For example, start and stop of HS-SCCH reception and serving HS-DSCH cell change.

If the UE receives a message in which presence is needed for the IE "Activation time", and the value is the default value "Now", the UE shall:

- 1> choose an activation time T as soon as possible after the reception of the message, respecting the performance requirements in subclause 13.5;
- 1> at the activation time T:
  - 2> perform the actions for the information elements in the received message as specified elsewhere.
- NOTE: In FDD, if the UE was in idle mode or CELL\_FACH or CELL\_PCH state upon reception of the message, regardless of the state the UE enters after reception of the message, and the value of the IE "Activation time" in the received message is different from "Now", the UE behaviour is unspecified. In TDD, if the UE was in idle mode or CELL\_FACH state upon reception of the message, the value of the IE "Activation time" in the received message is relative to the CFN associated with the cell from which the message was received.

### 8.6.3.1a CN domain specific DRX cycle length coefficient

The UE updates CN domain specific DRX cycle length coefficient as specified in [4]. The UE shall use it to calculate the CN domain specific DRX cycle length, according to the following:

- 1> set k to the value of the IE "CN domain specific DRX cycle length coefficient".
- 1> store the result of MAX(2<sup>k</sup>, PBP), where PBP is the Paging Block Periodicity, as the CN domain specific DRX cycle length for the CN domain indicated by the IE "CN domain identity". For FDD PBP=1.

The UE shall determine its idle mode paging occasions and PICH monitoring occasions for that CN domain, according to [4], based on the stored CN domain specific DRX cycle length, when using DRX in idle mode.

#### 8.6.3.1b H-RNTI

If the IE "New H-RNTI" is included and the UE will be in CELL\_DCH state after completion of this procedure, the UE shall:

- 1> if the IE "New H-RNTI" is received in a UTRAN MOBILITY INFORMATION message
  - 2> the UE behaviour is unspecified.
- 1> store the value in the variable H RNTI;
- 1> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

If the message that triggers the HS\_DSCH\_RECEPTION variable to change value from FALSE to TRUE does not contain the IE "New H-RNTI"; and

if, before receiving that message, the UE is not in CELL\_FACH or CELL\_PCH state or the variable H\_RNTI is not set:

1> the UE behaviour is not defined.

When the variable HS\_DSCH\_RECEPTION is set to TRUE the UE shall:

1> use the value of the variable H\_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

In FDD, if the IE "New H-RNTI" is included and the UE will be in CELL\_FACH state after completion of this procedure, the UE shall:

- 1> store the value in the variable H\_RNTI;
- 1> determine the value for the HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE variable and take the corresponding actions as described in subclause 8.5.36.

When the variable HS DSCH RECEPTION CELL FACH STATE is set to TRUE the UE shall:

1> use the value of the variable H\_RNTI as UE identity in the HS-SCCH reception procedure in the physical layer.

In FDD, if the IE "New H-RNTI" is included and the UE will be in CELL\_PCH state after completion of this procedure, the UE shall:

1> store the value in the variable H RNTI.

#### 8.6.3.2 UTRAN DRX Cycle length coefficient

If the IE "UTRAN DRX cycle length coefficient" is present, the UE shall use it to calculate the UTRAN DRX cycle length, according to the following:

- 1> start timer T319 using the IE "Time for DRX cycle 2" value;
- 1> store IE "DRX cycle length coefficient";
- 1> set k to the value of the IE "DRX cycle length coefficient 2";
- 1> store the result of MAX(2<sup>k</sup>PBP), where PBP is the Paging Block Periodicity, as the DRX cycle length.

The UE shall determine its connected mode paging occasions and PICH monitoring occasions in the same way as for idle mode, according to [4].

The DRX cycle length to use in connected mode is defined in [4].

#### 8.6.3.3 Generic state transition rules depending on received information elements

The IE "RRC State Indicator" indicates the state the UE shall enter. The UE shall enter the state indicated by the IE "RRC State Indicator" even if the received message includes other IEs relevant only for states other than indicated by the IE "RRC State Indicator". E.g. if the RRC state indicator is set to CELL\_FACH while other IEs provide information about a configuration including dedicated channels, the UE shall enter CELL\_FACH state. If however the UE has no information about the configuration corresponding to the state indicated by the IE "RRC State Indicator", it shall consider the requested configuration as invalid.

The UE shall, if the IE "RRC State Indicator" in the received message has the value:

- 1> "CELL FACH":
  - 2> enter CELL\_FACH state as dictated by the procedure governing the message received.
- 1> "CELL\_DCH":
  - 2> if neither DPCH is assigned in the message nor is the UE in CELL\_DCH:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.

- 2> else:
  - 3> enter CELL\_DCH state as dictated by the procedure governing the message received.
- 1> "CELL PCH":
  - 2> if the received message is RRC CONNECTION SETUP and IE "RRC State Indicator" is set to CELL\_PCH:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> else:
    - 3> enter CELL\_PCH state as dictated by the procedure governing the message received.
- 1> "URA PCH":
  - 2> if the received message is RRC CONNECTION SETUP and IE "RRC State Indicator" is set to URA\_PCH:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> else:
    - 3> enter URA\_PCH state as dictated by the procedure governing the message received.

#### 8.6.3.4 Ciphering mode info

The IE "Ciphering mode info" defines the new ciphering configuration. At any given time, the UE needs to store at most two different ciphering configurations (keyset and algorithm) per CN domain at any given time in total for all radio bearers and three configurations in total for all signalling radio bearers.

If the IE "Ciphering mode info" is present and if the IE "Reconfiguration" in the variable CIPHERING\_STATUS is set to TRUE, the UE shall:

- 1> ignore this second attempt to change the ciphering configuration; and
- 1> set the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION to TRUE.

If the IE "Ciphering mode info" is present and if the IE "Reconfiguration" in the variable CIPHERING\_STATUS is set to FALSE, the UE shall:

- 1> if none of the IE "Status" in the variable CIPHERING STATUS has the value "Started", and this IE "Ciphering mode info" was included in a message that is not the message SECURITY MODE COMMAND; or
- 1> if the IE "Ciphering Mode Info" was received in the message SECURITY MODE COMMAND and there does not exist exactly one ciphering activation time in the IE "Radio bearer downlink ciphering activation time info" for each established RLC-AM and RLC-UM radio bearers included in the IE "RB information" in the IE "ESTABLISHED\_RABS" for the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN; or
- 1> if the IE "Ciphering Mode Info" was received in the message SECURITY MODE COMMAND and the IE "Ciphering activation time for DPCH" is not included in the message, and there exist radio bearers using RLC-TM according to the IE "RB information" in the IE "ESTABLISHED\_RABS" for the CN domain as indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN; or
- 1> if the IE "Ciphering Mode Info" was received in the message SECURITY MODE COMMAND and there does not exist exactly one ciphering activation time in the IE "Radio bearer downlink ciphering activation time info" for each established signalling radio bearer included in the IE "Signalling radio bearer information" in the IE "ESTABLISHED\_RABS":
  - 2> ignore this attempt to change the ciphering configuration;
  - 2> set the variable INVALID\_CONFIGURATION to TRUE;
  - 2> perform the actions as specified in subclause 8.1.12.4c.
- 1> set the IE "Reconfiguration" in the variable CIPHERING\_STATUS to TRUE;

- 1> set the IE "Status" in the variable CIPHERING\_STATUS of the CN domains for which the IE "Status" of the variable SECURITY\_MODIFICATION is set to "Affected" to "Started";
- 1> apply the new ciphering configuration in the lower layers for all RBs that belong to a CN domain for which the IE "Status" of the variable SECURITY\_MODIFICATION is set to "Affected" and all signalling radio bearers:
  - 2> using the ciphering algorithm (UEA [40]) indicated by the IE "Ciphering algorithm" as part of the new ciphering configuration;
  - 2> for each radio bearer that belongs to a CN domain for which the IE "Status" of the variable SECURITY\_MODIFICATION is set to "Affected" and all signalling radio bearers:
    - 3> using the value of the IE "RB identity" in the variable ESTABLISHED\_RABS minus one as the value of BEARER [40] in the ciphering algorithm.
- 1> for the downlink and the uplink, apply the new ciphering configuration as follows:
  - 2> if the ciphering configuration for a AM or UM radio bearer or signalling radio bearer from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the current received message includes the IE "DL Counter Synch Info" or the current received message is a RADIO BEARER RECONFIGURATION message and includes the IE "New U-RNTI":
    - 3> if the previous SECURITY MODE COMMAND was received due to new keys being received:
      - 4> consider the new ciphering configuration to include the received new keys.
    - 3> else if the previous SECURITY MODE COMMAND caused a change in LATEST CONFIGURED CN DOMAIN:
      - 4> consider the new ciphering configuration to include the keys associated with the LATEST\_CONFIGURED\_CN\_DOMAIN.
    - 3> apply the new ciphering configuration in uplink and downlink immediately following RLC reestablishment.
  - 2> if the IE "Ciphering activation time for DPCH" is present in the IE "Ciphering mode info" and the UE was in CELL\_DCH state prior to this procedure:
    - 3> for radio bearers using RLC-TM:
      - 4> apply the old ciphering configuration for CFN less than the number indicated in the IE "Ciphering activation time for DPCH";
      - 4> apply the new ciphering configuration for CFN greater than or equal to the number indicated in IE "Ciphering activation time for DPCH".
  - 2> if the IE "Radio bearer downlink ciphering activation time info" is present:
    - 3> apply the following procedure for each radio bearer and signalling radio bearers using RLC-AM or RLC-UM indicated by the IE "RB identity":
      - 4> suspend uplink transmission on the radio bearer or the signalling radio bearer (except for the SRB where the response message is transmitted) according to the following:
        - 5> do not transmit RLC PDUs with sequence number greater than or equal to the uplink activation time, where the uplink activation time is selected according to the rules below.
      - 4> select an "RLC sequence number" at which (activation) time the new ciphering configuration shall be applied in uplink for that radio bearer according to the following:
        - 5> consider a ciphering activation time in uplink to be pending until the RLC sequence number of the next RLC PDU to be transmitted for the first time is equal to or larger than the selected activation time:

- 5> for each radio bearer and signalling radio bearer that has no pending ciphering activation time in uplink as set by a previous procedure changing the security configuration:
  - 6> set a suitable value that would ensure a minimised delay in the change to the latest ciphering configuration.
- 5> for each radio bearer and signalling radio bearer that has a pending ciphering activation time in uplink as set by a previous procedure changing the security configuration:
  - 6> for radio bearers and signalling radio bearers except SRB2:
    - 7> set the same value as the pending ciphering activation time.
  - 6> for signalling radio bearer SRB2:
    - 7> set a suitable value that would ensure a minimised delay in the change to the latest ciphering configuration.
- 4> store the selected "RLC sequence number" for that radio bearer in the entry for the radio bearer in the variable RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO;
- 4> switch to the new ciphering configuration according to the following:
  - 5> use the old ciphering configuration for the transmitted and received RLC PDUs with RLC sequence numbers smaller than the corresponding RLC sequence numbers indicated in the IE "Radio bearer uplink ciphering activation time info" sent to UTRAN and in the received IE "Radio bearer downlink ciphering activation time info" received from UTRAN, respectively;
  - 5> use the new ciphering configuration for the transmitted and received RLC PDUs with RLC sequence numbers greater than or equal to the corresponding RLC sequence numbers indicated in the IE "Radio bearer uplink ciphering activation time info" sent to UTRAN and in the received IE "Radio bearer downlink ciphering activation time info" received from UTRAN, respectively;
  - 5> for a radio bearer using RLC-AM, when the RLC sequence number indicated in the IE "Radio bearer downlink ciphering activation time info" falls below the RLC receiving window and the RLC sequence number indicated in the IE "Radio bearer uplink ciphering activation time info" falls below the RLC transmission window, the UE may release the old ciphering configuration for that radio bearer;
  - 5> if an RLC reset or re-establishment of the transmitting side of an RLC entity occurs before the activation time for the new ciphering configuration has been reached in uplink, ignore the activation time and apply the new ciphering configuration in uplink immediately after the RLC reset or RLC re-establishment;
  - 5> if an RLC reset or re-establishment of the receiving side of an RLC entity occurs before the activation time for the new ciphering configuration has been reached in downlink, ignore the activation time and apply the new ciphering configuration in downlink immediately after the RLC reset or RLC re-establishment.
- 2> if the current received message includes the IE "Downlink counter synchronisation info" or the current received message is a RADIO BEARER RECONFIGURATION message and includes the IE "New U-RNTI":
  - 3> apply the new ciphering configuration in uplink and downlink immediately following RLC reestablishment.

If the IE "Radio bearer downlink ciphering activation time info" was received in another message than SECURITY MODE COMMAND:

1> the UE behaviour is unspecified.

If the IE "Ciphering mode info" is not present, the UE shall:

1> for the downlink and the uplink, apply the ciphering configuration as follows:

- 2> if the ciphering configuration for a AM or UM radio bearer or signalling radio bearer from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the current received message includes the IE "Downlink counter synchronisation info" or the current received message is a RADIO BEARER RECONFIGURATION message and includes the IE "New U-RNTI":
  - 3> if the previous SECURITY MODE COMMAND was received due to new keys being received:
    - 4> consider the ciphering configuration to include the received new keys.
  - 3> else if the previous SECURITY MODE COMMAND caused a change in LATEST CONFIGURED CN DOMAIN:
    - 4> consider the ciphering configuration to include the keys associated with the LATEST\_CONFIGURED\_CN\_DOMAIN.
  - 3> apply the ciphering configuration in uplink and downlink immediately following RLC re-establishment.
- 2> else:
  - 3> not change the ciphering configuration.

#### 8.6.3.5 Integrity protection mode info

The IE "Integrity protection mode info" defines the new integrity protection configuration. At any given time, the UE needs to store at most three different integrity protection configurations (keysets) in total for all signalling radio bearers for all CN domains.

If the IE "Integrity protection mode info" is present and if the IE "Reconfiguration" in the variable INTEGRITY PROTECTION INFO is set to TRUE, the UE shall:

- 1> ignore this second attempt to change the integrity protection configuration; and
- 1> set the variable INCOMPATIBLE\_SECURITY\_RECONFIGURATION to TRUE.

If the IE "Integrity protection mode command" has the value "Start", the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Not started" and the IE "Integrity protection mode info" was not included in the message SECURITY MODE COMMAND; or

If the IE "Integrity protection mode command" has the value "Start", the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Not started", the IE "Integrity protection mode info" was included in the message SECURITY MODE COMMAND and the IE "Integrity protection algorithm" is not included; or

If the IE "Integrity protection mode command" has the value "Modify" and the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Not Started"; or

If the IE "Integrity protection mode command" has the value "Start", the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started" and the IE "Integrity protection mode command info" was included in the message SECURITY MODE COMMAND; or

If the IE "Integrity protection mode command" has the value "Modify" and there does not exist exactly one integrity protection activation time in the IE "Downlink integrity protection activation info" for each established signalling radio bearer included in the IE "Signalling radio bearer information" in the IE "ESTABLISHED\_RABS"; or

If the IE "Integrity protection mode command" has the value "Modify", the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started" and the IE "Integrity protection mode info" was not included in the message SECURITY MODE COMMAND:

the UE shall:

- 1> ignore this attempt to change the integrity protection configuration; and
- 1> set the variable INVALID\_CONFIGURATION to TRUE.

If the IE "Integrity protection mode info" is not present, the UE shall:

1> not change the integrity protection configuration.

If the IE "Integrity protection mode info" is present and if the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO is set to FALSE, the UE shall:

- 1> set the IE "Reconfiguration" in the variable INTEGRITY\_PROTECTION\_INFO to TRUE;
- 1> perform the actions in accordance with subclauses 8.6.3.5.1, 8.6.3.5.2 and 8.6.3.5.3.

#### 8.6.3.5.1 Initialisation of Integrity Protection

The UE shall:

- 1> if the IE "Integrity protection mode command" has the value "start" and the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Not started", and this IE was included in the message SECURITY MODE COMMAND:
  - 2> initialise the information for all signalling radio bearers in the variable INTEGRITY\_PROTECTION\_INFO according to the following:
    - 3> set the IE "Uplink RRC Message sequence number" in the variable INTEGRITY\_PROTECTION\_INFO to zero;
    - 3> do not set the IE "Downlink RRC Message sequence number" in the variable INTEGRITY\_PROTECTION\_INFO;
    - 3> set the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO to zero for each signalling radio bearer in the IE "ESTABLISHED\_RABS".
- NOTE: The IEs "Integrity protection activation info" and "RRC Message sequence number"included in the IE "Integrity Check Info" in the transmitted message do not have identical values, but integrity protection is applied from the first transmitted message.
  - 2> set the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO to the value "Started";
  - 2> perform integrity protection on the received message, applying the new integrity protection configuration, as described in subclause 8.5.10.1 by:
    - 3> using the algorithm (UIA [40]) indicated by the IE "Integrity protection algorithm" contained in the IE "Integrity protection mode info";
    - 3> using the IE "Integrity protection initialisation number", contained in the IE "Integrity protection mode info" as the value of FRESH [40].
  - 2> start applying the new integrity protection configuration in the downlink for each signalling radio bearer in the IE "ESTABLISHED\_RABS" except RB2 at the next received RRC message;
  - 2> start applying the new integrity protection configuration in the downlink for signalling radio bearer RB2 from and including the received SECURITY MODE COMMAND message;
  - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted SECURITY MODE COMPLETE message;
  - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearers other than RB2 at the uplink activation time included in the IE "Uplink integrity protection activation info".
- NOTE: After Inter-RAT handover to UTRAN, and ciphering was activated in the other RAT, then during the first security mode control procedure following the handover, UE activates integrity protection using the integrity key of the same key set as used in the other RAT (see.subclause 8.3.6.3).

# 8.6.3.5.2 Integrity Protection Re-configuration for SRNS Relocation and handover from GERAN lu mode

The UE shall:

1> if IE "Integrity protection mode command" has the value "start" and the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started" and this IE was not included SECURITY MODE COMMAND:

NOTE: This case is used in SRNS relocation and in handover from GERAN *Iu mode*.

- 2> perform integrity protection on the received message, applying the new integrity protection configuration, as described in subclause 8.5.10.1 by:
  - 3> using the algorithm (UIA [40]) indicated by the IE "Integrity protection algorithm" contained in the IE "Integrity protection mode info";
- NOTE: If the algorithm indicated by the IE "Integrity protection algorithm" is different from the one currently used by the UE, then this leads to a change of the integrity protection algorithm.
  - 3> using the IE "Integrity protection initialisation number", contained in the IE "Integrity protection mode info" as the value of FRESH [40].
  - 2> let RBm be the signalling radio bearer where the reconfiguration message was received and let RBn be the signalling radio bearer where the response message is transmitted;
  - 2> prohibit transmission of RRC messages on all signalling radio bearers in the IE "ESTABLISHED\_RABS" except on RB0 and the radio bearer where the response message is transmitted;
  - 2> for the downlink, for each signalling radio bearer, if for the signalling radio bearer, a security configuration triggered by a previous SECURITY MODE COMMAND has not yet been applied, due to the activation time for the signalling radio bearer not having been reached:
    - 3> set "Down link RRC Message sequence number" for this signalling radio bearer in the variable INTEGRITY\_PROTECTION\_INFO to (activation time -1), where the activation time is the corresponding activation time for this signalling radio bearer;
    - 3> if the previous SECURITY MODE COMMAND was received due to new keys being received:
      - 4> consider the new integrity protection configuration to include the received new keys.
    - 3> else if the previous SECURITY MODE COMMAND caused a change in LATEST\_CONFIGURED\_CN\_DOMAIN:
      - 4> consider the new Integrity Protection configuration to include the keys associated with the LATEST\_CONFIGURED\_CN\_DOMAIN associated with the previously received SECURITY MODE COMMAND.
  - 2> start applying the new integrity protection configuration in the downlink for each signalling radio bearer in the IE "ESTABLISHED\_RABS" except RBm at the next received RRC message for the corresponding signalling radio bearer;
  - 2> start applying the new integrity protection configuration in the downlink for signalling radio bearer RBm from and including the received configuration message;
  - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RBn from and including the transmitted response message;
  - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearers other than RBn from the first message onwards.

# 8.6.3.5.3 Integrity Protection modification in case of new keys or initialisation of signalling connection

#### The UE shall:

1> if the IE "Integrity protection mode command" has the value "modify" and the IE "Status" in the variable INTEGRITY\_PROTECTION\_INFO has the value "Started" and this IE was included in SECURITY MODE COMMAND:

- 2> store the (oldest currently used) integrity protection configuration until activation times have elapsed for the new integrity protection configuration to be applied on all signalling radio bearers;
- 2> start applying the new integrity protection configuration in the downlink for each signalling radio bearer n, at the first received message with RRC Sequence number greater than or equal to the RRC sequence number indicated by the entry for signalling radio bearer n in the "RRC message sequence number list" in the IE "Downlink integrity protection activation info", included in the IE "Integrity protection mode info";
- 2> perform integrity protection on the received message, applying the new integrity protection configuration, as described in subclause 8.5.10.1;
  - 3> if present, use the algorithm indicated by the IE "Integrity protection algorithm" (UIA [40]);
- 2> set the content of the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO according to the following:
  - 3> for each established signalling radio bearer, stored in the variable ESTABLISHED\_RABS:
    - 4> select a value of the RRC sequence number at which (activation) time the new integrity protection configuration shall be applied in uplink for that signalling radio bearer according to the following:
      - 5> for each signalling radio bearer except RB0:
        - 6> set the activation time for the new integrity protection configuration to the next RRC SN.
    - 4> for signalling radio bearer RB0:
      - 5> set the value of the included RRC sequence number to greater than or equal to the current value of the RRC sequence number for signalling radio bearer RB0 in the variable INTEGRITY\_PROTECTION\_INFO, plus the value of the constant N302 plus two.
    - 4> prohibit the transmission of RRC messages on all signalling radio bearers, except for RB2, with RRC SN greater than or equal to the value in the "RRC message sequence number list" for the signalling radio bearer in the IE "Uplink integrity protection activation info" of the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO.
- 2> start applying the new integrity protection configuration in the uplink at the RRC sequence number, for each RBn, except for signalling radio bearer RB2, indicated by the entry for signalling radio bearer n in the "RRC message sequence number list" in the IE "Uplink integrity protection activation info", included in the variable INTEGRITY\_PROTECTION\_ACTIVATION\_INFO;
- 2> start applying the new integrity protection configuration in the uplink at the RRC sequence number for signalling radio bearer RB2, as specified for the procedure initiating the integrity protection reconfiguration;
- 2> start applying the new integrity protection configuration in the downlink at the RRC sequence number, for each RBn, except for signalling radio bearer RB2, indicated by the entry for signalling radio bearer n in the "RRC message sequence number list" in the IE "Downlink integrity protection activation info";
- NOTE: For signalling radio bearers that have a pending activation time as set for integrity protection by a previous procedure changing the integrity protection configuration, UTRAN should set this value in IE "Downlink integrity protection activation info".
  - 2> start applying the new integrity protection configuration in the downlink at the RRC sequence number for signalling radio bearer RB2, as specified for the procedure initiating the integrity protection reconfiguration.
- 8.6.3.6 Void
- 8.6.3.7 Void

## 8.6.3.8 Integrity check info

If the IE "Integrity check info" is present the UE shall:

1> act as described in subclause 8.5.10.1.

## 8.6.3.9 New C-RNTI

If the IE "New C-RNTI" is included, the UE shall:

- 1> store the value in the variable C\_RNTI, replacing any old stored value;
- 1> use that C-RNTI when using common transport channels of type RACH and FACH in the current cell;
- 1> for FDD:
  - 2> if the UE is in CELL\_FACH and CELL\_PCH:
    - 3> use that C-RNTI when using the transport channel of type HS-DSCH.

#### 8.6.3.9a New DSCH-RNTI

In TDD if the IE "New DSCH-RNTI" is included, the UE shall:

- 1> if the UE will be in CELL\_DCH or CELL\_FACH at the end of the procedure where the received message included this IE:
  - 2> if the UE supports DSCH or USCH as indicated in the IE "Physical Channel Capability" included in the IE "UE Radio Access Capability":
    - 3> store the value in the variable DSCH\_RNTI, replacing any old stored value;
    - 3> use that DSCH-RNTI when using SHCCH signalling in the current cell.

## 8.6.3.10 New U-RNTI

If the IE "New U-RNTI" is included in a received message, the UE shall:

1> store the value in the variable U\_RNTI, replacing any old stored value.

## 8.6.3.11 RRC transaction identifier

The IE "RRC transaction identifier" may be used, together with the message type, for identification of an invocation of a downlink procedure (transaction). The UE behaviour for accepting or rejecting transactions based on the message type and the IE "RRC transaction identifier" is specified below.

If the IE "RRC transaction identifier" is included in a received message, the UE shall perform the actions below. The UE shall:

If the received message is any of the messages:

- RADIO BEARER SETUP; or
- RADIO BEARER RECONFIGURATION; or
- RADIO BEARER RELEASE; or
- TRANSPORT CHANNEL RECONFIGURATION; or
- PHYSICAL CHANNEL RECONFIGURATION:

the UE shall:

1> if the variable ORDERED\_RECONFIGURATION is set to FALSE; and

- 1> if the variable CELL\_UPDATE\_STARTED is set to FALSE; and
- 1> if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL\_ERROR\_REJECT is set to FALSE; and
- 1> if the table "Accepted transactions" in the variable TRANSACTIONS does not contain an entry with an IE "Message Type" set to ACTIVE SET UPDATE:
  - 2> accept the transaction; and
  - 2> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS.

#### 1> else:

- 2> if the variable ORDERED\_RECONFIGURATION is set to TRUE; or
- 2> if the variable CELL\_UPDATE\_STARTED is set to TRUE; or
- 2> if the table "Accepted transactions" in the variable TRANSACTIONS contains an entry with an IE "Message Type" set to ACTIVE SET UPDATE; or
- 2> if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE:
  - 3> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the same "Message Type" as the received message in the table "Accepted transactions" in the variable TRANSACTIONS:
    - 4> ignore the transaction; and
    - 4> continue with any ongoing processes and procedures as the message was not received;
    - 4> and end the procedure.
  - 3> else:
    - 4> reject the transaction; and
    - 4> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:
      - 5> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

#### Else:

If the received message is any of the messages:

- RRC CONNECTION SETUP; or
- CELL UPDATE CONFIRM; or
- URA UPDATE CONFIRM; or
- UE CAPABILITY ENQUIRY:

#### the UE shall:

- 1> if the IE "Message Type" of the received message is not present in the table "Accepted transactions" in the variable TRANSACTIONS:
  - 2> if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL\_ERROR\_REJECT is set to FALSE:
    - 3> accept the transaction; and

3> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS.

#### 2> else:

- 2> if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE:
  - 3> reject the transaction; and
  - 3> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:
    - 4> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

#### 1> else:

- 1> if the IE "Message Type" of the received message is present in the table "Accepted transactions" in the variable TRANSACTIONS:
  - 2> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:
    - 3> ignore the transaction; and
    - 3> continue with any ongoing processes and procedures as the message was not received; and
    - 3> end the procedure.
  - 2> else:
  - 2> if the IE "RRC transaction identifier" of the received message is different from the "RRC transaction identifier" stored for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:
    - 3> if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL\_ERROR\_REJECT is set to FALSE:
      - 4> ignore the once accepted transaction and instead accept the new transaction; and
      - 4> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS, replacing the previous entry.
- NOTE 1: The UE is expected to process the first RRC CONNECTION SETUP/CELL UPDATE CONFIRM/URA UPDATE COMFIRM message that it receives after transmitting an RRC CONNECTION REQUEST/CELL\_UPDATE/URA\_UPDATE message. If the UE receives further RRC CONNECTION SETUP/CELL UPDATE CONFIRM/URA UPDATE COMFIRM messages without having transmitted another RRC CONNECTION REQUEST/CELL\_UPDATE/URA\_UPDATE message, the UE is not required to process these messages.
- NOTE 2: If the previously accepted transaction was a CELL UPDATE CONFIRM/URA UPDATE CONFIRM that included the IE "Dowlink counter synchronisation info", rather than ignore the first accepted transaction the UE may continue with the first transaction in the case where a cell re-selection interrupted the ongoing procedure causing a cell update procedure to be triggered. In this case the response message acts as an explicit acknowledgement of both the CELL UPDATE CONFIRM/URA UPDATE CONFIRM message signalling an SRNS relocation and the subsequent CELL UPDATE CONFIRM/URA UPDATE CONFIRM.
  - 3> else:
  - 3> if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE:
    - 4> reject the transaction; and

- 4> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:
  - 5> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

#### Else:

If the received message is any of the messages:

- HANDOVER FROM UTRAN COMMAND; or
- CELL CHANGE ORDER FROM UTRAN:

#### the UE shall:

- 1> if the variable ORDERED\_RECONFIGURATION is set to TRUE;
  - 2> reject the transaction; and
  - 2> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:
    - 3> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

#### Else:

If the received message is any other message, the UE shall:

- 1> if the IE "Message Type" of the received message is not present in the table "Accepted transactions" in the variable TRANSACTIONS:
  - 2> if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL\_ERROR\_REJECT is set to FALSE:
    - 3> accept the transaction; and
    - 3> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS.
  - 2> else:
  - 2> if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL\_ERROR\_REJECT to be set to TRUE:
    - 3> reject the transaction; and
    - 3> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

#### 1> else:

- 1> if the IE "Message Type" of the received message is present in the table "Accepted transactions" in the variable TRANSACTIONS:
  - 2> if the IE "RRC transaction identifier" of the received message is identical to the "RRC transaction identifier" stored in any entry for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:
    - 3> ignore the transaction; and
    - 3> continue with any ongoing processes and procedures as the message was not received; and
    - 3> end the procedure.
  - 2> else:

- 2> if the IE "RRC transaction identifier" of the received message is different from the "RRC transaction identifier" stored in all entries for the "Message Type" in the table "Accepted transactions" in the variable TRANSACTIONS:
  - 3> if the received message does not contain a protocol error according to clause 9 and the variable PROTOCOL\_ERROR\_REJECT is set to FALSE:
    - 4> accept the additional transaction; and
    - 4> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Accepted transactions" in the variable TRANSACTIONS, in addition to the already existing entries.
  - 3> else:
  - 3> if the received message contains a protocol error according to clause 9 causing the variable PROTOCOL ERROR REJECT to be set to TRUE:
    - 4> reject the transaction; and
    - 4> store the IE "Message type" and the IE "RRC transaction identifier" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS.

# 8.6.3.12 Capability Update Requirement

If the IE "Capability Update Requirement" is included the UE shall:

- 1> if the IE "UE radio access FDD capability update requirement" has the value TRUE:
  - 2> if the UE supports FDD mode:
    - 3> store its UTRA FDD capabilities and its UTRA capabilities common to FDD and TDD in the IE "UE radio access capability" and the IE "UE radio access capability extension" in variable UE\_CAPABILITY\_REQUESTED as specified below:
      - 4> if the UE supports any radio access capability included in IE "UE radio access capability extension" that is not included in IE "UE radio access capability":
- NOTE: This is valid e.g. for UE that supports multiple UTRA FDD Bands and UE that supports a single UTRA FDD Band different from Band I [21].
  - 5> store the IE "UE radio access capability", excluding IEs "RF capability FDD" and "Measurement capability";
  - 5> store the IE "UE radio access capability extension", including the IEs "RF capability FDD extension" and the "Measurement capability extension" associated with each supported UTRA FDD frequency band indicated in the IE "Frequency band".
  - 4> else:
    - 5> store the IE "UE radio access capability", including the IEs "RF capability FDD" and "Measurement capability" associated with the Band I [21].
- 1> if the IE "UE radio access 3.84 Mcps TDD capability update requirement" has the value TRUE:
  - 2> if the UE supports 3.84 Mcps TDD mode:
    - 3> store its UTRAN-specific 3.84 Mcps TDD capabilities and its UTRAN-specific capabilities common to FDD and TDD in the variable UE\_CAPABILITY\_REQUESTED.
- 1> if the IE "UE radio access 7.68 Mcps TDD capability update requirement" has the value TRUE:
  - 2> if the UE supports 7.68 Mcps TDD mode:
    - 3> store its UTRAN-specific 7.68 Mcps TDD capabilities and its UTRAN-specific capabilities common to FDD and TDD in the variable UE\_CAPABILITY\_REQUESTED.

- 1> if the IE "UE radio access 1.28 Mcps TDD capability update requirement" has the value TRUE:
  - 2> if the UE supports 1.28 Mcps TDD mode:
    - 3> store its UTRAN-specific 1.28 Mcps TDD capabilities and its UTRAN-specific capabilities common to FDD and TDD in the variable UE\_CAPABILITY\_REQUESTED.
- 1> if the IE "System specific capability update requirement list" is present:
  - 2> for each of the RAT requested in the IE "UE system specific capability"
    - 3> if the UE supports the listed RAT:
      - 4> include its inter-RAT radio access capabilities for the listed RAT in the IE "UE system specific capability" from the variable UE\_CAPABILITY\_REQUESTED.
      - 4> if the listed RAT is GSM and PS Handover to GPRS is supported:
        - 5> include the IE "MS Radio Access Capability" in the variable UE\_CAPABILITY\_REQUESTED;

If the IE " Capability update requirement " is not present, the UE shall:

1> assume the default values as specified in subclause 10.3.3.2 and act in accordance with the above.

#### 8.6.3.13 Group release information

The UE shall apply the following procedure to compare the IE "U-RNTI group" with the U-RNTI allocated to the UE stored in the variable U\_RNTI.

If the IE "group discriminator" is equal to "All":

1> consider this as a group identity match.

If the IE "group discriminator" is equal to "U-RNTI mask":

- 1> let N be the value of the IE "U-RNTI bit mask index";
- 1> if N is equal to b20, b21, ... or b31:
  - 2> compare pairs of bits, starting from bit b31 downto, and including, bit N of the "SRNC identity" of the IE "U-RNTI" with the corresponding bits stored in the variable U RNTI;
  - 2> if all pairs of bits are equal:
    - 3> consider this as a group identity match.
- 1> if N is equal to b1, b2, ... or b19:
  - 2> compare pairs of bits, starting from bit b31 downto, and including, bit b20 of the "SRNC identity" in the IE "U-RNTI" with the corresponding bits of the "SRNC identity" stored in the variable U\_RNTI;
  - 2> if all pairs of bits are equal:
    - 3> then compare pairs of bits, starting from bit b19 downto, and including, bit N of the "S-RNTI" in the IE "U-RNTI" with the corresponding bits of the "S-RNTI" stored in the variable U\_RNTI;
    - 3> if all pairs of bits are equal:
      - 4> consider this as a group identity match.
- NOTE 1: The most significant bits of the U-RNTI, which indicate the "SRNC identity" must be unique among all RNC's, which support all the UEs in the group to be released, in order to obtain correct behaviour of group release.

#### 8.6.3.14 New E-RNTI

If the IE "New Primary E-RNTI" and/or the IE "New Secondary E-RNTI" (FDD only) are/is included and the UE will be in CELL\_DCH state after completion of this procedure, the UE shall:

- 1> store the new value(s) in the variable E\_RNTI;
- 1> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

If, after the completion of this procedure, the variable E\_DCH\_TRANSMISSION is set to FALSE, the UE shall:

1> clear the variable E RNTI.

When the variable E\_DCH\_TRANSMISSION is set to TRUE the UE shall:

- 1> for FDD:
  - 2> use the value of the Primary E-RNTI and/or Secondary E-RNTI stored in the variable E\_RNTI as UE identities in the E-AGCH reception procedure in the physical layer.
- 1> for TDD:
  - 2> use the value of New Primary E-RNTI stored in the variable E\_RNTI as the UE identity in the E-AGCH reception procedure and the E-RUCCH transmission procedure in the physical layer.

# 8.6.4 Radio bearer information elements

# 8.6.4.1 Signalling RB information to setup list

If the IE "Signalling RB information to setup list" is included the UE shall:

- 1> use the same START value to initialise the COUNT-C and COUNT-I variables for all the signalling radio bearers in the list;
- 1> if the IE "Signalling RB information to setup list" was included in the RADIO BEARER SETUP message:
  - 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised:
    - 3> calculate the START value only once during this procedure according to subclause 8.5.9 for the CN domain indicated in the variable LATEST\_CONFIGURED\_CN\_DOMAIN;
    - 3> store the calculated START value in the variable START\_VALUE\_TO\_TRANSMIT.
- 1> for each occurrence of the IE "Signalling RB information to setup":
  - 2> use the value of the IE "RB identity" as the identity of the signalling radio bearer to setup;
  - 2> if the signalling radio bearer identified with the IE "RB identity" does not exist in the variable ESTABLISHED RABS:
    - 3> create a new entry for the signalling radio bearer in the variable ESTABLISHED\_RABS.
  - 2> if the IE "Signalling RB information to setup list" was received in a message other than HANDOVER TO UTRAN COMMAND; and
  - 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised and the value "STATUS" of the variable CIPHERING\_STATUS of the CN domain stored in this variable is "Started":
    - 3> if the IE "Uplink RLC mode" or the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "AM RLC" or "UM RLC":
      - 4> initialise the 20 MSB of the hyper frame number component of COUNT-C for this signalling radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;

- 4> set the remaining LSB of the hyper frame number component of COUNT-C for this signalling radio bearer to zero;
- 4> start to perform ciphering on this signalling radio bearer, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.
- 2> if the IE "Signalling RB information to setup list" was received in a message other than HANDOVER TO UTRAN COMMAND; and
- 2> if the variable LATEST\_CONFIGURED\_CN\_DOMAIN has been initialised and the value "Status" of the variable "INTEGRITY\_PROTECTION\_INFO" of the CN domain stored in this variable is "Started":
  - 3> initialise the 20 MSB of the hyper frame number component of COUNT-I for this signalling radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
  - 3> set the remaining LSB of the hyper frame number component of COUNT-I for this signalling radio bearer to zero;
  - 3> for this signalling radio bearer, set the IE "Uplink RRC Message sequence number" in the variable INTEGRITY PROTECTION INFO to zero;
  - 3> start performing integrity protection according to subclauses 8.5.10.1 and 8.5.10.2.
- 2> perform the actions for the IE "RLC info" as specified in subclause 8.6.4.9, applied for that signalling radio bearer;
- 2> perform the actions for the IE "RB mapping info" as specified in subclause 8.6.4.8, applied for that signalling radio bearer.
- 1> apply a default value of the IE "RB identity" equal to 1 for the first IE "Signalling RB information to setup"; and
- 1> increase the default value by 1 for each occurrence.
- NOTE: The UTRAN should only use the default value of the IE "RB identity" within the RRC Connection Setup and Handover to UTRAN Command messages. If the default value of the IE "RB identity" is used in any other message then the UE behaviour is not specified.

# 8.6.4.2 RAB information for setup

If the IE "RAB information for setup" is included, the procedure is used to establish radio bearers belonging to a radio access bearer, and the UE shall:

- 1> if several IEs "RAB information for setup" are included in a message other than HANDOVER TO UTRAN COMMAND and the included IEs "CN domain identity" in the IE "RAB info" does not all have the same value:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the radio access bearer identified with the IE "RAB info" does not exist in the variable ESTABLISHED\_RABS:
  - 2> create a new entry for the radio access bearer in the variable ESTABLISHED\_RABS;
  - 2> store the content of the IE "RAB info" in the entry for the radio access bearer in the variable ESTABLISHED\_RABS;
  - 2> indicate the establishment of each radio access bearer to the upper layer entity using the IE "CN domain identity", forwarding the content of the IE "RAB identity" and the IEs NAS Synchronization Indicator as well as the following IEs if included in the IE "RAB info": "MBMS Session identity" and/ or "MBMS Service Identity";
  - 2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" and at least one transparent mode radio bearer is included in the IE "RB information to setup"; or
  - 2> if at least one RLC-AM or RLC-UM radio bearer is included in the IE "RB information to setup":

- 3> calculate the START value only once during this procedure (the same START value shall be used on all new radio bearers created for this radio access bearer) according to subclause 8.5.9 for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" part of the IE "RAB information to setup";
- 3> store the calculated START value in the variable START\_VALUE\_TO\_TRANSMIT.
- 1> for each radio bearer in the IE "RB information to setup":
  - 2> if the radio bearer identified with the IE "RB identity" does not exist in the variable ESTABLISHED\_RABS:
    - 3> perform the actions specified in subclause 8.6.4.3;
    - 3> store information about the new radio bearer in the entry for the radio access bearer identified by "RAB info" in the variable ESTABLISHED\_RABS;
    - 3> create a new RAB subflow for the radio access bearer;
    - 3> number the RAB subflow in ascending order, assigning the smallest number to the RAB subflow corresponding to the first radio bearer in the list;
    - 3> if the IE "CN domain identity" in the IE "RAB info" is set to "PS domain" and the number of RAB subflows for the radio access bearer is greater than 1:
      - 4> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> if the radio bearer identified with the IE "RB identity" already exists in the variable ESTABLISHED\_RABS:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.

# 8.6.4.2a RAB information to reconfigure

If the IE "RAB information to reconfigure" is included then the UE shall:

1> if the entry for the radio access bearer identified by the IE "CN domain identity" together with the IE "RAB Identity" in the variable ESTABLISHED\_RABS already exists:

2> perform the action for the IE "NAS Synchronization Indicator", according to subclause 8.6.4.12.

1> else:

2> set the variable INVALID\_CONFIGURATION to TRUE.

#### 8.6.4.3 RB information to setup

If the IE "RB information to setup" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

- 1> use the same START value to initialise the hyper frame number components of COUNT-C variables for all the new radio bearers to setup;
- 1> perform the actions for the IE "PDCP info", if present, according to subclause 8.6.4.10, applied for the radio bearer;
- 1> perform the actions for the IE "RLC info", according to subclause 8.6.4.9, applied for the radio bearer;
- 1> perform the actions for the IE "RB mapping info", according to subclause 8.6.4.8, applied for the radio bearer;
- 1> if the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "TM RLC":
  - 2> configure delivery of erroneous SDUs in lower layers according to indication from upper layer [5].
- 1> if the IE "RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and

- 1> if the IE "Uplink RLC mode" or the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "AM RLC" or "UM RLC":
  - 2> initialise the 20 MSB of the hyper frame number component of COUNT-C for this radio bearer with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
  - 2> set the remaining LSB of the hyper frame number component of COUNT-C for this radio bearer to zero;
  - 2> start incrementing the COUNT-C values.
- 1> if the IE "RB information to setup" was received in a message other than HANDOVER TO UTRAN COMMAND; and
- 1> if the IE "Uplink RLC mode" and the IE "Downlink RLC mode" either in the IE "RLC info" or referenced by the RB identity in the IE "Same as RB" is set to "TM RLC":
  - 2> if prior to this procedure there exists no transparent mode radio bearer for the CN domain included in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS and at least one transparent mode radio bearer is included in the IE "RB information to setup":
    - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Not Started":
      - 4> at the activation time as specified in the IE "Ciphering activation time for DPCH" if included in the IE "Ciphering mode info" in the command message or, if this IE is not included, as specified in the IE "COUNT-C activation time" included in the response message:
        - 5> initialise the 20 most significant bits of the hyper frame number component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
        - 5> set the remaining LSB of the hyper frame number component of COUNT-C to zero;
        - 5> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain.
    - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
      - 4> at the activation time as specified in the IE "Activation Time" in the RADIO BEARER SETUP message:
        - 5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode RLC radio bearer to the value of the latest transmitted START for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and
        - 5> set the remaining LSB of the HFN component of COUNT-C to zero;
        - 5> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN.
      - 4> at the activation time as specified in the IE "Ciphering activation time for DPCH" if included in the IE "Ciphering mode info" in the command message or, if this IE is not included, as specified in the IE "COUNT-C activation time" included in the response message:
        - 5> initialise the 20 most significant bits of the HFN component of COUNT-C common for all transparent mode radio bearers of this CN domain with the START value in the variable START\_VALUE\_TO\_TRANSMIT;
        - 5> set the remaining LSB of the HFN component of COUNT-C to zero;
        - 5> if the received message is used to perform a Timing re-initialised hard handover:
          - 6> increment the HFN component of the COUNT-C variable by one even if the "COUNT-C activation time" is set to zero.

- 5> start incrementing the COUNT-C value common for all transparent mode radio bearers of this CN domain as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.
- 2> if prior to this procedure there exists at least one transparent mode radio bearer for the CN domain included in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS:
  - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Not Started":
    - 4> do not increment the COUNT-C value common for all transparent mode radio bearers for this CN domain
  - 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
    - 4> use the COUNT-C value common for all transparent mode radio bearers of this CN domain.
- 1> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED\_RABS is set to "Started":
  - 2> start to perform ciphering on the radio bearer in lower layers, using the value of the IE "RB identity" minus one as the value of BEARER in the ciphering algorithm.

NOTE: UTRAN should not use the IE "RB information to setup" to setup radio bearers with RB identity in the range 1-4.

## 8.6.4.4 RB information to be affected

If the IE "RB information to be affected" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

1> perform the actions for the IE "RB mapping info", according to subclause 8.6.4.8, applied for the radio bearer.

## 8.6.4.4a Void

# 8.6.4.5 RB information to reconfigure

If the IE "RB information to reconfigure" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

- 1> perform the actions for the IE "PDCP info", if present, according to subclause 8.6.4.10, applied for the radio bearer:
- 1> if the IE "RLC info" is present:
  - 2> perform the actions for the IE "RLC info", according to subclause 8.6.4.9, applied for the radio bearer.
- 1> else:
  - 2> continue using the current RLC configuration for the radio bearer.
- 1> perform the actions for the IE "RB mapping info", according to subclause 8.6.4.8, applied for the radio bearer;
- 1> if the IE "Downlink RLC mode" in the IE "RLC info" is set to "TM RLC":
  - 2> configure delivery of erroneous SDUs in lower layers according to indication from upper layer [5].
- 1> if the IE "PDCP SN info" is included:
  - 2> perform the actions as specified in subclause 8.6.4.11 applied for the radio bearer.
- 1> if the IE "RB stop/continue" is included; and

- 2> if the "RB identity" has a value greater than 2; and
  - 3> if the value of the IE "RB stop/continue" is "stop":
    - 4> configure the RLC entity for the radio bearer to stop;
    - 4> set the IE "RB started" in the variable ESTABLISHED\_RABS to "stopped" for that radio bearer.
  - 3> if the value of the IE "RB stop/continue" is "continue":
    - 4> configure the RLC entity for the radio bearer to continue;
    - 4> set the IE "RB started" in the variable ESTABLISHED\_RABS to "started" for that radio bearer.
- 2> if the IE "RB identity" is set to a value less than or equal to 2:
  - 3> set the variable INVALID\_CONFIGURATION to TRUE.

## 8.6.4.6 RB information to release

If the IE "RB information to release" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

- 1> if the IE "RB identity" is set to a value less than 4:
  - 2> set the variable INVALID CONFIGURATION to TRUE.
- 1> if the IE "RB identity" refers to a signalling radio bearer:
  - 2> release the RLC entity for the signalling radio bearer;
  - 2> delete the information about the signalling radio bearer from the variable ESTABLISHED RABS.
- 1> if the IE "RB identity" refers to a radio bearer:
  - 2> release the PDCP and RLC entities for that radio bearer;
  - 2> indicate release of the RAB subflow associated with the radio bearer to upper layers;
  - 2> delete the information about the radio bearer from the variable ESTABLISHED\_RABS;
  - 2> when all radio bearers belonging to the same radio access bearer have been released:
    - 3> indicate release of the radio access bearer to upper layers providing the "CN domain identity" together with the "RAB identity" and the "MBMS Service Identity" if stored in the variable ESTABLISHED\_RABS;
    - 3> delete all information about the radio access bearer from the variable ESTABLISHED RABS.

# The UE shall:

- 1> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25;
- 1> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

#### 8.6.4.7 RB with PDCP information

If the IE "RB with PDCP information" is included, the UE shall apply the following actions on the radio bearer identified with the value of the IE "RB identity". The UE shall:

- 1> for the IE "PDCP SN info":
  - 2> perform the actions as specified in subclause 8.6.4.11.

## 8.6.4.8 RB mapping info

If the IE "RB mapping info" is included, the UE shall:

- 1> for each multiplexing option of the RB:
  - 2> if a multiplexing option that maps a logical channel corresponding to a TM-RLC entity onto RACH, FACH, USCH, DSCH (only for TDD), HS-DSCH or E-DCH is included:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> if the multiplexing option realises the radio bearer on the uplink (resp. on the downlink) using two logical channels with different values of the IE "Uplink transport channel type" (resp. of the IE "Downlink transport channel type"):
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> if that RB is using TM and the IE "Segmentation indication" is set to TRUE and, based on the multiplexing configuration resulting from this message, the logical channel corresponding to it is mapped onto the same transport channel as another logical channel:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> if the transport channel considered in that multiplexing option is different from RACH and if that RB is using AM and the set of RLC sizes applicable to the uplink logical channel transferring data PDUs has more than one element not equal to zero:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> if that RB is using UM or TM and the multiplexing option realises it using two logical channels:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> for each logical channel in that multiplexing option:
    - 3> if the value of the IE "RLC size list" is set to "Explicit list":
      - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the IE transport format set of that transport channel given in the message; or
      - 4> if the transport channel this logical channel is mapped on in this multiplexing option is different from RACH, and if a "Transport format set" for that transport channel is not included in the same message, and the value (index) of any IE "RLC size index" in the IE "Explicit list" does not correspond to an "RLC size" in the stored transport format set of that transport channel; or
      - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or
      - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE "Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":
        - 5> set the variable INVALID\_CONFIGURATION to TRUE.
    - 3> if the value of the IE "RLC size list" is set to "All":
      - 4> if the transport channel this logical channel is mapped on is RACH; or
      - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and the value of any IE "Logical channel list" in the transport format set is not set to "Configured"; or

- 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and the value of any IE "Logical channel list" in the stored transport format set of that transport channel is not set to "Configured":
  - 5> set the variable INVALID\_CONFIGURATION to TRUE.
- 3> if the value of the IE "RLC size list" is set to "Configured":
  - 4> if the transport channel this logical channel is mapped on is RACH; or
  - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is included in the same message, and for none of the RLC sizes defined for that transport channel in the "Transport format set", the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel; or
  - 4> if a "Transport format set" for the transport channel this logical channel is mapped on in this multiplexing option is not included in the same message, and for none of the RLC sizes defined in the transport format set stored for that transport channel, the "Logical Channel List" is set to "All" or given as an "Explicit List" which contains this logical channel:
    - 5> set the variable INVALID CONFIGURATION to TRUE.
- 1> if, for the HS-DSCH transport channel, when MAC-hs is configured and as a result of the message this IE is included in, several radio bearers can be mapped onto the same MAC-d flow, and the IE "Logical Channel Identity" was not included in the RB mapping info of any of those radio bearers for a multiplexing option on that MAC-d flow or the same "Logical Channel Identity" was used more than once in the RB mapping info of those radio bearers for the multiplexing options on that MAC-d flow:
  - 2> the UE behaviour is not specified.
- 1> if, for the HS-DSCH transport channel, when MAC-ehs is configured and as a result of the message this IE is included in, several radio bearers can be mapped onto the reordering queue(s), and the IE "Logical Channel Identity" was not included in the RB mapping info of any of those radio bearers for a multiplexing option on at least one reordering queue or the same "Logical Channel Identity" was used more than once in the RB mapping info of those radio bearers for the multiplexing options on any reordering queue:
  - 2> the UE behaviour is not specified.
- 1> if, as a result of the message this IE is included in, several radio bearers can be mapped onto the E-DCH MAC-d flows(s), and the IE "Logical Channel Identity" was not included in the RB mapping info of any of those radio bearers for a multiplexing option on at least one E-DCH MAC-d flow or the same "Logical Channel Identity" was used more than once in the RB mapping info of those radio bearers for the multiplexing options on any MAC-d flow:
  - 2> the UE behaviour is not specified.
- 1> if, for transport channels other than HS-DSCH and E-DCH, as a result of the message this IE is included in, several radio bearers can be mapped onto the same transport channel, and the IE "Logical Channel Identity" was not included in the RB mapping info of any of those radio bearers for a multiplexing option on that transport channel or the same "Logical Channel Identity" was used more than once in the RB mapping info of those radio bearers for the multiplexing options on that transport channel:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if, as a result of the message this IE is included in, there are several radio bearers configured with a multiplexing option mapped on "HS-DSCH", i.e., a downlink transport channel of type "HS-DSCH" or "DCH + HS-DSCH", and there is at least one radio bearer with a multiplexing option configured with the DL MAC header type set to "MAC-hs" and at least one radio bearer with a multiplexing option configured with the DL MAC header type set to "MAC-ehs":
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the "RB mapping info" is considered as valid according to the rules above:
  - 2> delete all previously stored multiplexing options for that radio bearer;

- 2> store each new multiplexing option for that radio bearer;
- 2> perform the actions as specified in subclause 8.5.21;
- 2> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25;
- 2> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.
- 1> if the IE "Uplink transport channel type" is set to the value "RACH":
  - 2> in FDD:
    - 3> refer the IE "RLC size index" to the RACH Transport Format Set of the first PRACH received in the IE "PRACH system information list" received in System Information Block 5, System Information Block 5bis or System Information Block 6.
  - 2> in TDD:
    - 3> use the first Transport Format of the PRACH of the IE "PRACH system information list" at the position equal to the value in the IE "RLC size index".
- 1> if the IE "Downlink transport channel type" is set to the value "HS-DSCH" and the DL MAC header type is set to "MAC-ehs":
  - 2> if the IE "Logical channel identity" is present:
    - 3> configure the receiving MAC-ehs entity with the value of the IE "Logical channel identity" to be used in the "LCH-ID" field of the MAC-ehs header [15] associated with the MAC-ehs reordering queue identified by the value of the IE "DL HS-DSCH MAC-ehs Queue Id".
  - 2> else:
    - 3> set the variable INVALID CONFIGURATION to TRUE.

In case IE "RLC info" includes IE "Downlink RLC mode" ("DL RLC logical channel info" is mandatory present) but IE "Number of downlink RLC logical channels" is absent in the corresponding IE "RB mapping info", the parameter values are exactly the same as for the corresponding UL logical channels. In case two multiplexing options are specified for the UL, the first options shall be used as default for the DL. As regards the IE "Channel type", the following rule should be applied to derive the DL channel type from the UL channel included in the IE:

| Channel used in UL | DL channel type implied by<br>"same as" |
|--------------------|---|
| DCH                | DCH                                     |
| RACH               | FACH                                    |
| USCH               | DSCH                                    |

If ciphering is applied, UTRAN should not map Transparent Mode RBs of different CN domains on the same transport channel and it should not map transparent mode SRBs and RBs onto the same transport channel. In such cases the UE behaviour is not specified.

For FDD the list of multiplexing options configured in the UE for each RB and SRB should comply with the following rules otherwise the UE behaviour is not specified:

- at most one multiplexing option can contain the combination "FACH" for the DL and "RACH" for the UL;
- for FDD, at most one multiplexing option can contain the combination "HS-DSCH" mapped on MAC-ehs for the DL and "RACH" for the UL;
- at most one multiplexing option can contain the combination "DCH" or "DCH + HS-DSCH" for the DL together with "DCH" for he UL;
- at most one multiplexing option can contain the combination "HS-DSCH" or "DCH + HS-DSCH" for the DL together with "DCH" for the UL;

- at most one multiplexing option can contain the combination "DCH" or "DCH + HS-DSCH" for the DL together with "E-DCH" for the UL; and
- at most one multiplexing option can contain the combination "HS-DSCH" or "DCH + HS-DSCH" for the DL together with "E-DCH" for the UL.

#### 8.6.4.9 RLC Info

Upon reception of the IE "RLC Info", the UE shall:

- 1> if both the IE "Uplink RLC mode" and the IE "Downlink RLC mode" are present in the IE "RLC info":
  - 2> configure the transmitting and receiving RLC entities in the UE for that radio bearer accordingly.
- 1> else, if the IE "Uplink RLC mode" is present and the IE "Downlink RLC mode" is not present in the IE "RLC info":
  - 2> configure the transmitting RLC entity in the UE for that radio bearer accordingly and keep the configuration existing before the reception of the message for the receiving RLC entity.
- 1> else, if the IE "Uplink RLC mode" is not present and the IE "Downlink RLC mode" is present in the IE "RLC info":
  - 2> configure the receiving RLC entity in the UE for that radio bearer accordingly and keep the configuration existing before the reception of the message for the transmitting RLC entity.
- 1> if the IE "Polling info" is present in the IE "RLC info":
  - 2> for each present IE in the IE "Polling info":
    - 3> configure RLC to use the corresponding function according to the value of the IE.
  - 2> for each absent IE in the IE "Polling info":
    - 3> configure RLC to not use the corresponding function.
- 1> if the IE "Polling info" is absent:
  - 2> configure RLC to not use the polling functionality.
- 1> if the IE "Downlink RLC STATUS info" is present in the IE "RLC info" (this IE is present for AM RLC):
  - 2> for each present IE in the IE "Downlink RLC STATUS info":
    - 3> configure RLC to use the corresponding function according to value of the IE.
  - 2> for each absent IE in the IE "Downlink RLC STATUS info":
    - 3> configure RLC to not use the corresponding function.
- 1> if the IE "Transmission RLC discard" is present:
  - 2> configure the discard procedure in RLC according to the IE "Transmission RLC discard"
- 1> if the IE "Transmission RLC discard" is absent (only possible for TM RLC and UM RLC):
  - 2> do not configure SDU discard in RLC.
- 1> if the IE "Uplink RLC mode" is present and is set to "AM RLC":
  - 2> if the IE "Use special value of HE field" is present:
    - 3> configure the uplink RLC entity to use the special value of the HE field to indicate the end of an SDU.
  - 2> if the IE "Use special value of HE field" is not present:
    - 3> configure the uplink RLC entity to not use the special value of the HE field to indicate the end of an SDU.

- 1> if the IE "Uplink RLC mode" is present and is set to "UM RLC":
  - 2> if the IE "Alternative E-bit interpretation" is present:
    - 3> configure the uplink RLC entity to use the alternative E-bit interpretation and corresponding LI's.
  - 2> if the IE "Alternative E-bit interpretation" is not present:
    - 3> configure the uplink RLC entity to use the normal E-bit interpretation and corresponding LI's.
- 1> if the IE "Downlink RLC mode" is present and is set to "AM RLC":
  - 2> if IE "DL RLC PDU size" is not present:
    - 3> determining the downlink RLC PDU size will be handled at RLC level as described in [16], without any configuration from RRC.
- NOTE: The case where this mandatory IE is not present is meant to handle the interaction with a network using an earlier release of the specification.
  - 2> else, if the IE "DL RLC PDU size" is present, the DL RLC PDU size is set to "fixed size" and no downlink RLC PDU size is currently set in the RLC entity:
    - 3> configure the corresponding RLC entity with the downlink RLC PDU size.
  - 2> else, if the DL RLC PDU size is set to "flexible size" and no downlink RLC PDU size is currently set in the RLC entity:
    - 3> if this radio bearer is a signalling radio bearer:
      - 4> the UE behaviour is unspecified.
    - 3> else, configure the corresponding RLC entity with the RLC length indicator size indicated in the IE "Length indicator size".
  - 2> else, if the DL RLC PDU size is changed to "flexible size" from "fixed size" and the the indicated RLC length indicator size is 7 bits:
    - 3> if this radio bearer is a signalling radio bearer:
      - 4> the UE behaviour is unspecified.
    - 3> else, configure the corresponding RLC entity with flexible RLC PDU size and the RLC length indicator size indicated in the IE "Length indicator size".
  - 2> else, if the IE "DL RLC PDU size" is present, the DL RLC PDU size is set to "fixed size" and DL RLC PDU size value is different from the one currently set in the RLC entity; or
  - 2> the DL RLC PDU size is set to "flexible size" and the indicated RLC length indicator size is different from the one currently set in the RLC entity; or
  - 2> the DL RLC PDU size is changed to "fixed size" from "flexible size"; or
  - 2> the DL RLC PDU size is changed to "flexible size" from "fixed size" and the indicated RLC length indicator size is 15 bits:
- NOTE: The downlink RLC PDU size set in the RLC entity should be explicitly configured in this release of the specification.
  - 3> if the DL RLC PDU size is set to "flexible size":
    - 4> if this radio bearer is a signalling radio bearer:
      - 5> the UE behaviour is unspecified.
  - 3> if the IE "one sided RLC re-establishment" is set to TRUE:
    - 4> re-establish the receiving side of the corresponding RLC entity.

- 3> else:
  - 4> re-establish the corresponding RLC entity.
- 3> if the DL RLC PDU size is set to "fixed size":
  - 4> configure the corresponding RLC entity with the new downlink RLC PDU size.
- 3> if the DL RLC PDU size is set to "flexible size":
  - 4> configure the corresponding RLC entity with the RLC length indicator size indicated in the IE "Length indicator size".
- 3> if the UE supports the lossless DL RLC PDU size change and PDCP was configured for that radio bearer with the IE "Support for lossless SRNS relocation or for lossless DL RLC PDU size change" set to TRUE:
  - 4> include the current DL PDCP receive sequence number and the radio bearer identity for that radio bearer in the variable PDCP\_SN\_INFO.
- 3> if the IE "Status" in the variable CIPHERING\_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" for this radio bearer is set to "Started":
  - 4> if the RLC re-establishment is caused by a CELL UPDATE CONFIRM:
    - 5> if only the receiving side of the RLC entity was re-established:
      - 6> set the HFN values for the corresponding RLC entity in downlink equal to the value of the IE "START" included in the latest transmitted CELL UPDATE message for this CN domain.
    - 5> if the whole RLC entity was re-established:
      - 6> set the HFN values for the corresponding RLC entity in uplink and downlink equal to the value of the IE "START" included in the latest transmitted CELL UPDATE message for this CN domain.
  - 4> if the RLC re-establishment is caused by a reconfiguration message:
    - 5> if only the receiving side of the RLC entity was re-established:
      - 6> set the HFN values for the corresponding RLC entity in downlink equal to the value of the IE "START" that will be included in the reconfiguration complete message for this CN domain.
    - 5> if the whole RLC entity was re-established:
      - 6> set the HFN values for the corresponding RLC entity in uplink and downlink equal to the value of the IE "START" that will be included in the reconfiguration complete message for this CN domain.
- 2> if the IE "Use special value of HE field" is present:
  - 3> configure the downlink RLC entity to use the special value of the HE field to indicate the end of an SDU.
- 2> if the IE "Use special value of HE field" is not present:
  - 3> configure the downlink RLC entity to not use the special value of the HE field to indicate the end of an SDLI
- 1> if the IE "Downlink RLC mode" is present and is set to "UM RLC":
  - 2> if the IE "DL UM RLC LI size" is not present:
    - 3> configure the corresponding RLC entity with an LI size of 7 bits;

- NOTE: The case where this mandatory IE is not present is meant to handle the interaction with a network using an earlier release of the specification.
  - 2> else:
    - 3> configure the corresponding RLC entity with the LI size indicated in the IE "DL UM RLC LI size".
  - 2> if the IE "DL Reception Window Size" is present:
    - 3> if the variable UE\_CAPABILITY\_TRANSFERRED indicates "Support of HS-PDSCH" as "Supported":
      - 4> configure the corresponding RLC entity to support out-of-sequence reception with the receive window size indicated in the IE.
    - 3> if the variable UE\_CAPABILITY\_TRANSFERRED indicates "Support of HS-PDSCH" as "Unsupported":
      - 4> the UE behaviour is not specified.
  - 2> else:
    - 3> configure the corresponding RLC entity without out-of-sequence reception.
- NOTE: If the "Uplink RLC mode" or the "Downlink RLC mode" of an existing radio bearer is modified by a reconfiguration message, the UE behaviour is unspecified.
  - 2> if the IE "Alternative E-bit interpretation" is present:
    - 3> configure the downlink RLC entity to use the alternative E-bit interpretation and corresponding LI's.
  - 2> if the IE "Alternative E-bit interpretation" is not present:
    - 3> configure the downlink RLC entity to use the normal E-bit interpretation and corresponding LI's.

## 8.6.4.10 PDCP Info

For RFC 3095:

- 1> the chosen MAX\_CID shall be less than the value "Maximum number of ROHC context sessions" as indicated in the IE "PDCP Capability".
- If IE "PDCP info" is included, the UE shall:
  - 1> if the radio bearer is connected to a CS domain radio access bearer:
    - 2> set the variable INVALID\_CONFIGURATION to TRUE.
  - 1> if the IE "PDCP PDU header" is set to the value "absent":
    - 2> if the IE "Support for lossless SRNS relocation or for lossless DL RLC PDU size change" is true:
      - 3> set the variable INVALID\_CONFIGURATION to TRUE.
  - 1> if the IE "PDCP PDU header" is set to the value "present":
    - 2> include PDCP headers in both uplink and downlink PDCP PDUs;
    - 2> if the IE "Support for lossless SRNS relocation or for lossless DL RLC PDU size change" is false:
      - 3> if the IE "Header compression information" is absent:
        - 4> set the variable INVALID\_CONFIGURATION to TRUE.
  - 1> if the IE "Header compression information" is absent:
    - 2> not use Header compression after the successful completion of this procedure;
    - 2> remove any stored configuration for the IE "Header compression information".

- 1> if the IE "Header compression information" is present:
  - 2> if the IE "Algorithm Type" is set to "RFC 2507":
    - 3> if the UE capability "Maximum header compression context space", as specified in [35], is exceeded with this configuration:
      - 4> set the variable INVALID\_CONFIGURATION to TRUE.
    - 3> if the IE "PDCP PDU header" is set to the value "absent":
      - 4> the behaviour of the UE is unspecified.
  - 2> if the IE "Algorithm Type" is set to "RFC 3095":
    - 3> if the uplink RLC mode for this radio bearer is RLC-TM:
      - 4> the behaviour of the UE is unspecified.
- 1> configure the PDCP entity for that radio bearer accordingly;
- 1> configure the RLC entity for that radio bearer according to the value of the IE "Support for lossless SRNS relocation or for lossless DL RLC PDU size change";
- 1> set the PROFILES parameter, used by inband ROHC profile negotiation, for this PDCP entity for both UL and DL equal to the list of ROHC profiles received in the IE "PDCP info". A UE complying to this version of the protocol shall support ROHC profiles 0x0000 (ROHC uncompressed), 0x0001 (ROHC RTP), 0x0002 (ROHC UDP) and 0x0003 (ROHC ESP) (see [52]).
- 1> if the IE "PDCP ROHC target mode" is received:
  - 2> set the variable "PDCP\_ROHC\_TARGET\_MODE" to the received value.
- 1> if the IE "PDCP ROHC target mode" is not received in either of the CELL UPDATE CONFIRM, the RADIO BEARER RECONFIGURATION or the RADIO BEARER SETUP message:
  - 2> delete the variable "PDCD\_ROHC\_TARGET\_MODE" and act according to actions specified in [36].

#### 8.6.4.11 PDCP SN Info

If the IE "PDCP SN Info" is included, the UE shall:

- 1> transfer the sequence number to the PDCP entity for the radio bearer;
- 1> configure the RLC entity for the radio bearer to stop;
- 1> include the current PDCP receive sequence number and the radio bearer identity for the radio bearer in the variable PDCP\_SN\_INFO.

# 8.6.4.12 NAS Synchronisation Indicator

If the IE "NAS Synchronisation Indicator" is present in a message, the UE shall:

1> forward the content to upper layers along with the IE "CN domain identity" of the associated RAB stored in the variable ESTABLISHED\_RABS at the CFN indicated in the IE "Activation time" in order to synchronise actions in NAS and AS.

#### 8.6.4.13 PDCP context relocation info

If the IE "PDCP context relocation info" is included, the UE shall, for each radio bearer included in this IE:

- 1> If the IE "Downlink RFC 3095 context relocation indication" is set to TRUE:
  - 2> perform the actions as specified in [36] for all RFC 3095 contexts associated with that radio bearer in the downlink.

- 1> If the IE "Uplink RFC 3095 context relocation indication" is set to TRUE:
  - 2> perform the actions as specified in [36] for all RFC 3095 contexts associated with that radio bearer in the uplink.

#### 8.6.4.14 RLC Info MBMS

Upon reception of the IE "RLC Info MBMS", the UE shall:

- 1> configure the receiving RLC entity in the UE for that radio bearer accordingly;
- 1> configure the corresponding RLC entity with the LI size indicated in the IE "DL UM RLC LI size".
- 1> if the IE "DL Duplication Avoidance and Reordering info" is present:
  - 2> configure the corresponding RLC entity to use the UM duplication avoidance and reordering functionality.
- 1> if the IE "DL Out of sequence delivery info" is present:
  - 2> configure the corresponding RLC entity to use the UM out of sequence delivery functionality.

## 8.6.4.15 RAB information for MBMS ptp bearer

If the IE "RAB information for MBMS ptp bearer" is included then the UE shall:

- 1> if an entry for the radio access bearer identified by the IE "RB Identity" already exists in the variable ESTABLISHED\_RABS and a value of the IE "MBMS Service Identity" is stored in this entry of the variable ESTABLISHED\_RABS:
  - 2> notify upper layers that the radio access bearer characterised by the parameters currently stored in this entry of the variable ESTABLISHED\_RABS is released;
  - 2> reuse this entry of the variable ESTABLISHED\_RABS and update it with the received value of IE "MBMS Service Identity" and, if included, with the received value of IE "MBMS Session Identity";
  - 2> notify upper layers that the radio access bearer characterised by the updated parameters in this entry is established.
- 1> else:
  - 2> set the variable INVALID CONFIGURATION to TRUE.

# 8.6.5 Transport channel information elements

## 8.6.5.1 Transport Format Set

If the IE "Transport format set" is included, the UE shall:

- 1> if the transport format set is a RACH TFS received in System Information Block type 5 or System Information Block type 5bis or System Information Block type 6, and CHOICE "Logical Channel List" has a value different from "Configured":
  - 2> ignore that System Information Block.
- NOTE: The TFS added by the IE "Additional Dynamic Transport Format Information for CCCH" has no CHOICE "Logical Channel List" and can thus never be considered as different from "Configured".
- 1> if the transport format set for a downlink transport channel is received in a System Information Block, and CHOICE "Logical Channel List" has a value different from 'ALL':
  - 2> ignore that System Information Block.
- 1> if the transport format set for a downlink transport channel is received in a message on a DCCH, and CHOICE "Logical Channel List" has a value different from 'ALL':

- 2> keep the transport format set if this exists for that transport channel;
- 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the value of any IE "RB identity" (and "Logical Channel" for RBs using two UL logical channels) in the IE "Logical channel list" does not correspond to a logical channel indicated to be mapped onto this transport channel in any RB multiplexing option (either included in the same message or previously stored and not changed by this message); or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is set to "Configured" while it is set to "All" or given as an "Explicit List" for any other RLC size; or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is set to "All" and for any logical channel mapped to this transport channel, the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is not set to "Configured"; or
- 1> if the "Logical Channel List" for any of the RLC sizes defined for that transport channel is given as an "Explicit List" that contains a logical channel for which the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is not set to "Configured"; or
- 1> if the "Logical Channel List" for all the RLC sizes defined for that transport channel are given as "Explicit List" and if one of the logical channels mapped onto this transport channel is not included in any of those lists; or
- 1> if the "Logical Channel List" for the RLC sizes defined for that transport channel is set to "Configured" and for any logical channel mapped onto that transport channel, the value of the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored) is also set to "Configured"; or
- 1> if the IE "Transport Format Set" was not received within the IE "PRACH system information list" and if the "Logical Channel List" for the RLC sizes defined for that transport channel is set to "Configured" and for any logical channel mapped onto that transport channel, the "RLC size list" (either provided in the IE "RB mapping info" if included in the same message, or stored ) is given as an "Explicit List" that includes an "RLC size index" that does not correspond to any RLC size in this "Transport Format Set"; or
- 1> if the IE "Transport Format Set" was not received within the IE "PRACH system information list", and if that RB is using AM and the set of RLC sizes applicable to the logical channel transferring data PDUs has more than one element not equal to zero:
  - 2> keep the transport format set if this exists for that transport channel;
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the total number of configured transport formats for the transport channel exceeds maxTF:
  - 2> keep the transport format set if this exists for that transport channel;
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the IE "Transport format set" is considered as valid according to the rules above:
  - 2> remove a previously stored transport format set if this exists for that transport channel;
  - 2> store the transport format set for that transport channel;
  - 2> consider the first instance of the parameter *Number of TBs and TTI List* within the *Dynamic transport format information* to correspond to transport format 0 for this transport channel, the second to transport format 1 and so on:
  - 2> if the IE "Transport format Set" has the choice "Transport channel type" set to "Dedicated transport channel":
    - 3> calculate the transport block size for all transport formats in the TFS using the following

TB size = RLC size + MAC header size if "RLC size" 
$$\Leftrightarrow$$
 0,  
TB size = 0 if "RLC size" = 0,

where:

- MAC header size is calculated according to [15] if MAC multiplexing is used. Otherwise it is 0 bits;

- 'RLC size' reflects the RLC PDU size.
- 2> if the IE "Transport format Set" has the choice "Transport channel type" set to "Common transport channel":
  - 3> calculate the transport block size for all transport formats in the TFS using the following:

$$TB size = RLC size.$$

- 2> if the IE "Number of Transport blocks" <> 0 and IE "RLC size" = 0, no RLC PDU data exists but only parity bits exist for that transport format;
- 2> if the IE "Number of Transport blocks" = 0, neither RLC PDU neither data nor parity bits exist for that transport format;
- 2> perform the actions as specified in subclause 8.5.21.

For configuration restrictions on Blind Transport Format Detection, see [27].

# 8.6.5.2 Transport format combination set

If the IE "Transport format combination set" is included for the uplink, the UE shall for that direction:

- 1> store the new transport format combination set, or (if this exists) modify a previously stored transport format combination set according to IEs included in IE "Transport format combination set";
- 1> start to respect those transport format combinations;
- 1> if IE "Transport format combination subset" is received in this message:
  - 2> perform the actions as specified in subclause 8.6.5.3.
- 1> if IE "Transport format combination subset" is not received in this message:
  - 2> clear the IE "Duration" in the variable TFC\_SUBSET;
  - 2> set both the IE "Current TFC subset" and the IE "Default TFC subset" in the variable TFC\_SUBSET to the value indicating "full transport format combination set".

If the IE "Transport format combination set" is included for the downlink, the UE shall for that direction:

- 1> store the new transport format combination set, or (if this exists) modify a previously stored transport format combination set according to IEs included in IE "Transport format combination set";
- 1> start to respect those transport format combinations.

If the IE "Transport format combination set" is not included for the uplink and if there is no addition, removal or reconfiguration of transport channels, the UE shall for that direction:

1> use a previously stored transport format combination set if this exists.

If the IE "Transport format combination set" is not included for the downlink and if there is no addition, removal or reconfiguration of transport channels, the UE shall for that direction:

1> use a previously stored transport format combination set if this exists.

If the IE "Transport format combination set" is not included for either the uplink or the downlink and for that direction after the reconfiguration there is one or more stored DCH configuration; and

- 1> if no transport format combination set is stored in the UE; or
- 1> if transport channels are added or removed in the message; or
- 1> if any transport channel is reconfigured in the message such that the size of the transport format set is changed: the UE shall:
  - 1> set the variable INVALID\_CONFIGURATION to TRUE.

If the IE "Transport format combination set" is not included for either the uplink or the downlink and for that direction after the reconfiguration there is no stored DCH configuration, the UE shall:

1> remove any stored transport format combination set for dedicated channels for that direction.

In the uplink TFCS the minimum set of TFCs is the set of TFCs that is needed for the TFC selection algorithm defined in [15] to give a predictable result. Any configured TFCS or TFC subset shall satisfy the requirements as specified by the minimum set. In the definition of the minimum set of TFCs below, only logical channels for which the TFCS or the TFC subset include at least one TFC with non-empty TF for the corresponding transport channel should be considered.

The minimum set of TFCs consists of the following:

- 1> for each UM logical channel:
  - 2> a TFC with one transport block for this transport channel and empty TFs (see [34]) for all the others. If more than one TFC fulfils these criteria, only the TFC with the lowest number of bits should be included in the minimum set of TFCs.
- 1> for each AM logical channel:
  - 2> a TFC with a non-empty TF for the corresponding transport channel and empty TFs for all other transport channels, where the non-empty TF includes one transport block with "Configured RLC Size" equal to the RLC PDU size.
- 1> for each set of "synchronous" TM logical channels (see the definition below) and for each set of SDU sizes associated with it:
  - 2> a TFC with TFs corresponding to any combination of SDU sizes that can be received in a TTI from higher layers on the corresponding transport channels and empty TFs for all other transport channels.
- NOTE: In case an adaptive rate codec is used and the TFCS has been restricted by the IE "TFC subset", the minimum set consists of the set of TFCs with TFs corresponding to any combination of SDU sizes that can be received in a TTI respecting the restricted TFCS.
- 1> for each TM logical channel that is not part of a set of "synchronous" TM logical channels (see the definition below):
  - 2> a TFC with non-empty TFs for the corresponding transport channel, and empty TFs for all other transport channels, where
    - 3> for non-segmented mode TM-RLC logical channels the non-empty TFs include, for the smallest SDU size that can be received in a single TTI from higher layer:
      - 4> a TF with non-zero number of transport blocks with "Configured RLC Size" equal to the corresponding SDU size. If more than one TFC fulfils these criteria, only the TFC with the lowest number of bits in the TFC is included in the minimum set of TFCs.
    - 3> for segmented mode TM-RLC, the non-empty TFs include any TF such that the number of transport blocks multiplied by the "Configured RLC Size" is equal to the smallest SDU size that can be received in a single TTI from higher layer.
- 1> an "empty" TFC (see [34]).

Furthermore, the UTRAN should ensure that the uplink TFCS and any configured TFC Subset satisfies the following rules:

- 1> for each TTI length with which at least one transport channel is configured:
  - 2> for each combination of TFs for the transport channels configured with this TTI length included in the TFCS:
    - 3> a TFC with these TFs for the transport channels configured with this TTI length and empty TFs on all transport channels configured with shorter TTI lengths is also included in the TFCS.

For TDD, the TFCS of a CCTrCH should include those of the above combinations, which include a TF with one transport block for a transport channel used in that CCTrCH, and the "empty" TFC should be included in the TFCS of every CCTrCH.

Synchronous TM logical channels are logical channels on which higher layer traffic is generated in a perfectly correlated fashion (e.g. AMR RAB).

NOTE: The "Configured RLC Size" is defined as the transport block size minus the MAC header size.

## 8.6.5.3 Transport format combination subset

When configuring a TFC Subset, the UTRAN should follow the guidelines defined in subclause 8.6.5.2.

If the IE "Transport format combination subset" ("TFC subset") is included, the UE shall:

- 1> if the IE "Minimum allowed Transport format combination index" is included; and
  - 2> if the value of the IE "Minimum allowed Transport format combination index" is greater than the highest TFCI value in the current transport format combination set:
    - 3> consider the TFC subset to be incompatible with the current transport format combination set.
- 1> if the IE "Allowed transport format combination list" is included; and
  - 2> if the value of any of the IEs "Allowed transport format combination" included in the IE "Allowed transport format combination list" does not match a TFCI value in the current transport format combination set:
    - 3> consider the TFC subset to be incompatible with the current transport format combination set.
- 1> if the IE "Non-allowed transport format combination list" is included; and
  - 2> if the value of any of the IEs "Non-allowed transport format combination" included in the IE "Non-allowed transport format combination list" does not match a TFCI value in the current transport format combination set:
    - 3> consider the TFC subset to be incompatible with the current transport format combination set.
- 1> if the IE "Restricted TrCH information" is included:
  - 2> if the value of any of the IEs "Uplink transport channel type" and "Restricted UL TrCH identity" included in the IE "Restricted TrCH information" do not correspond to any of the transport channels for which the current transport format combination set is valid:
    - 3> consider the TFC subset to be incompatible with the current transport format combination set.
  - 2> if the IE "Allowed TFIs" is included; and
    - 3> if the value of each of the IEs "Allowed TFI" included in the IE "Allowed TFIs" corresponds to a transport format for that transport channel within the current transport format combination set:
      - 4> allow all transport format combinations that include these transport formats for the transport channel;
      - 4> restrict all other transport format combinations.
    - 3> else:
      - 4> consider the TFC subset to be incompatible with the current transport format combination set.
  - 2> if the IE "Allowed TFIs" is not included:
    - 3> restrict all transport format combinations where the transport channel has a transport format of non-zero rate.
- 1> if the UE considers the TFC subset to be incompatible with the current Transport format combination set according to the above:
  - 2> keep any previous restriction of the transport format combination set;
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.

- 1> if the UE does not consider the TFC subset to be incompatible with the current Transport format combination set according to the above:
  - 2> if the IE "Transport format combination subset" is received in a message other than a TRANSPORT FORMAT COMBINATION CONTROL message:
    - 3> set both the IE "Current TFC subset" and the IE "Default TFC subset" in the variable TFC\_SUBSET to the IE "Transport format combination subset" (in case of TDD for the uplink CCTrCH specified by the IE "TFCS Id");
    - 3> clear the IE "Duration" in the variable TFC SUBSET;
    - 3> apply the transport format combination subset in the IE "Current TFC subset" stored in the variable TFC SUBSET.
- 1> if the IE "transport format combination subset" indicates the "full transport format combination set":
  - 2> set both the IE "Current TFC subset" and the IE "Default TFC subset" in the variable TFC\_SUBSET to the value indicating "full transport format combination set";
  - 2> clear the IE "Duration" in the variable TFC\_SUBSET;
  - 2> if the IE "Transport format combination subset" is received in a TRANSPORT FORMAT COMBINATION CONTROL message, then at the CFN indicated by the IE "Activation time for TFC subset" any restriction on transport format combination set is released and the UE may use the full transport format combination set;
  - 2> else:
    - 3> any restriction on transport format combination set is released and the UE may use the full transport format combination set.

# 8.6.5.4 DCH quality target

If the IE "DCH quality target" is included, the UE shall:

- 1> set, at physical channel establishment, the initial downlink target SIR value based on the received IE "DCH quality target" for the transport channel with respect to all transport formats;
- 1> adjust the target SIR for the downlink power control to meet the quality target received in the IE "DCH quality target" for the transport channel. The UE shall not compensate for the fact that the required SIR to achieve a target BLER for a particular transport format may be different from the required SIR to achieve the target BLER for another transport format..
- NOTE 1: Adjusting the target SIR is possible to do continuously by the UE if a CRC exists in all transport formats in the downlink TFS for a DCH. If a CRC does not exist in all transport formats, the UE can only adjust the target SIR when receiving transport formats containing a CRC and the UE has knowledge about the transport format according to [27].
- NOTE 2: If the UTRAN configures a UE to use blind transport format detection and configures a transport channel such that single transport format detection [27] must be used to detect the TF, then it is not possible for the UE to maintain a quality target for that transport channel.

## 8.6.5.5 Added or Reconfigured UL TrCH information

If the IE "Added or Reconfigured UL TrCH information" is included then the UE shall:

- 1> for the transport channel identified by the IE "UL Transport Channel Identity" and IE "Uplink transport channel type":
  - 2> perform the actions for the IE "Transport Format Set" as specified in subclause 8.6.5.1.
- NOTE: The UE stores the UL transport channel configuration until it is explicitly deleted by a message containing the IE "Deleted UL TrCH information" or the UE leaves RRC Connected mode.
- 1> if the choice "UL parameters" is set to 'E-DCH':

- 2> for FDD:
  - 3> apply the values of the IE "E-DCH Transmission Time Interval" and the IE "HARQ info for E-DCH" to all E-DCH MAC-d flows.
- 2> for TDD:
  - 3> apply the value of the IE "HARQ info for E-DCH" to all E-DCH MAC-d flows.
- 2> for the IE "HARQ Info for E-DCH":
  - 3> perform the actions specified in subclause 8.6.5.17.
- 2> if the IE "Added or Reconfigured E-DCH MAC-d Flow list " is included:
  - 3> for each MAC-d flow identified by the IE "Mac-d flow identity":
    - 4> perform the actions as specified in subclause 8.6.5.18.
- 2> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

NOTE: In case of multiple E-DCH MAC-d flows, IE "Added or Reconfigured UL TrCH information" is only included once. If the IE "Added or Reconfigured UL TrCH information" is included more than once with the IE "Uplink transport channel type" set to 'E-DCH', the UE behaviour is unspecified.

## 8.6.5.5a Added or reconfigured MAC-d flow

If the IE "Added or reconfigured MAC-d flow" is included, the UE shall:

- 1> if a MAC-hs queue (identified by the IE "MAC-hs queue Id") is included in both the IE "MAC-hs queue to add or reconfigure list" and the IE "MAC-hs queue to delete list":
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> for each MAC-hs queue included in the IE "MAC-hs queue to add or reconfigure" list:
  - 2> if the UE has previously stored a mapping between this MAC-hs queue and a MAC-d flow:
    - 3> delete the old mapping.
  - 2> map the MAC-d flow indicated in the current message to this MAC-hs queue;
  - 2> set the release timer for each of the MAC-hs queues in the MAC-hs entity to the value in the corresponding IE "T1";
  - 2> set the MAC-hs receiver window size for each of the MAC-hs queues in the MAC-hs entity to the value in the corresponding IE "MAC-hs window size"; and
  - 2> configure MAC-hs with the mapping between MAC-d PDU sizes index and allowed MAC-d PDU sizes as follows:
    - 3> if a MAC-d PDU size has been stored for a MAC-d PDU size index for the corresponding MAC-hs queue and no mapping is provided in the current message for this MAC-d PDU index:
      - 4> continue to use this mapping.
    - 3> if a MAC-d PDU size has been stored for a MAC-d PDU size index for the corresponding MAC-hs queue and a mapping is provided in the current message for this MAC-d PDU index:
      - 4> configure the MAC-hs entity with the mapping indicated in the current message.
- 1> for each MAC-hs queue included in the IE "MAC-hs queue to delete" list:
  - 2> delete any information about the MAC-hs queue identified by the IE "MAC-hs queue Id".
- 1> if the IE "Added or reconfigured MAC-d flow" is considered valid according to the rules above:

2> perform the actions as specified in subclause 8.5.21.

## 8.6.5.6 Added or Reconfigured DL TrCH information

If the IE "Added or Reconfigured DL TrCH information" is included the UE shall:

- 1> for the transport channel identified by the IE "DL Transport Channel Identity":
  - 2> if the choice "DL parameters" is set to 'explicit':
    - 3> perform the actions for the IE "Transport Format Set" as specified in subclause 8.6.5.1.
  - 2> if the choice "DL parameters" is set to 'same as uplink':
    - 3> if the IE "UL Transport Channel Identity" indicates an existing or a new UL Transport Channel:
      - 4> store as transport format for this transport channel the transport format associated with the transport channel identified by the IE "UL Transport Channel Identity".
    - 3> else:
      - 4> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> if the IE "DCH quality target" is included:
    - 3> perform the actions specified in subclause 8.6.5.4.
- 1> if the choice "DL parameters" is set to "HSDSCH":
  - 2> if the IE "HARQ Info" is included:
    - 3> perform the actions specified in subclause 8.6.5.6b.
  - 2> if the IE "Added or Reconfigured MAC-d Flow" is included:
    - 3> perform the actions as specified in subclause 8.6.5.5a.
  - 2> if the IE "Added or Reconfigured MAC-ehs reordering queue" is included:
    - 3> perform the actions as specified in subclause 8.6.5.23.
  - 2> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

NOTE: The UE stores the DL transport channel configuration until it is explicitly deleted by a message containing the IE "Deleted DL TrCH information" or the UE leaves RRC connected mode.

#### 8.6.5.6a Void

#### 8.6.5.6b HARQ Info

If the IE "HARQ Info" is included, the UE shall:

- 1> store the received configuration;
- 1> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25;
- 1> determine the value for the HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE variable and take the corresponding actions as described in subclause 8.5.36.

When the variable HS\_DSCH\_RECEPTION or variable HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE is set to TRUE the UE shall:

1> configure the MAC-hs/ehs entity with the number of HARQ processes indicated in IE "Number of Processes";

- 1> assign to each of these HARQ processes IDs going from 0 to "Number of Processes" 1;
- 1> if the IE "Memory Partitioning" is set to 'Implicit':
  - 2> partition the soft memory buffer in the MAC-hs/ehs entity equally among the processes configured above. In the event that the division of the soft memory buffer results in a non-Integer value the partition memory size is rounded down to the nearerst Integer value.
- 1> if the IE "Memory Partitioning" is set to 'Explicit':
  - 2> if the UE capability "Total number of soft channel bits in HS-DSCH", as specified in [35], is exceeded with this configuration:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
- 2> else:
  - 3> partition the soft memory buffer in the MAC-hs/ehs entity according to the IE "Process memory size" assuming that the order in the list follows the order in the HARQ process IDs.

## 8.6.5.7 Deleted UL TrCH information

If the IE "Deleted UL TrCH information" is included the UE shall:

- 1> if an Uplink transport channel is requested to be deleted:
  - 2> delete any information about the transport channel identified by the IE "UL TrCH identity" and the IE "Uplink transport channel type".
- 1> if an E-DCH MAC-d flow is requested to be deleted:
  - 2> delete any information about the E-DCH MAC-d flow identified by the IE "E-DCH MAC-d flow identity";
  - 2> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

#### 8.6.5.8 Deleted DL TrCH information

If the IE "Deleted DL TrCH information" is included the UE shall:

- 1> if a Downlink transport channel is requested to be deleted:
  - 2> delete any information about the transport channel identified by the IE "DL TrCH identity".
- 1> if a DL MAC-d flow is requested to be deleted:
  - 2> delete any information about the DL HS-DSCH MAC-d flow identified by the IE "MAC-d Flow Identity", i.e. delete any information about MAC-hs queue(s) mapped onto this MAC-d flow.
  - 2> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.
- 1> if a DL MAC-ehs reordering queue is requested to be deleted:
  - 2> delete any information about the DL HS-DSCH DL MAC-ehs reordering queue identified by the IE "DL HS-DSCH MAC-ehs queue Id";
  - 2> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

# 8.6.5.9 UL Transport channel information common for all transport channels

If the IE "UL Transport channel information common for all transport channels" is included the UE shall:

1> perform actions for the IE "TFC subset" as specified in subclause 8.6.5.3;

- 1> if the IE "PRACH TFCS" is included:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the IE has the choice "mode" set to FDD:
  - 2> perform actions for the IE "UL DCH TFCS" as specified in subclause 8.6.5.2.
- 1> if the IE has the choice "mode" set to TDD:
  - 2> if the IE "Individual UL CCTrCH information" is included:
    - 3> for each TFCS identified by IE "UL TFCS id":
      - 4> perform actions for the IE "UL TFCS" as specified in subclause 8.6.5.2.
- 1> if the IE "TFC subset list" is included:
  - 2> remove a previously stored TFC subset list if this exists in the IE "TFC subset list" in the variable TFC\_SUBSET;
  - 2> store the IE "TFC subset list" in the IE "TFC subset list" in the variable TFC\_SUBSET;
  - 2> consider the first instance of the IE "TFC subset" in the IE "TFC subset list" as Transport Format Combination Subset 0 (TFC subset identity = 0), the second instance as Transport Format Combination Subset 1 (TFC subset identity = 1) and so on;
  - 2> if the IE"TFC subset list" contains greater than 8 elements then the UE behaviour is not specified.
- NOTE: The UTRAN should not modify the TFC subset list when a temporary restriction of the TFC set is being applied, due to the reception of the IE "TFC Control Duration" in a TRANSPORT FORMAT COMBINATION CONTROL message is still being applied.

## 8.6.5.10 DL Transport channel information common for all transport channels

If the IE "DL Transport channel information common for all transport channels" is included the UE shall:

- 1> if the IE "SCCPCH TFCS" is included:
  - 2> set the variable INVALID CONFIGURATION to TRUE.
- 1> if the IE choice "mode" is set to FDD:
  - 2> if the choice "DL parameters" is set to 'explicit':
    - 3> if the IE "DL DCH TFCS" is included:
      - 4> if the IE "SCCPCH TFCS" is included and the state the UE enters after handling the received information is other than CELL\_DCH:
        - 5> ignore the received IE "DL DCH TFCS".
- NOTE: the IE "DL Transport channel information common for all transport channels" always includes a DL DCH TFCS configuration, either by including the IE "DL DCH TFCS" or by specifying that the TFCS is the same as in UL. If UTRAN does not require the reconfiguration of the concerned parameters, UTRAN may replace one TFC with the value that is already assigned for this IE.
  - 4> else:
    - 5> perform actions as specified in subclause 8.6.5.2.
- 1> if the IE choice "mode" is set to TDD:
  - 2> if the IE "Individual DL CCTRCH information" is included:
    - 3> for each DL TFCS identified by the IE "DL TFCS identity":

- 4> if the IE choice "DL parameters" is set to 'independent':
  - 5> perform actions for the IE "DL TFCS" as specified in subclause 8.6.5.2.
- 4> if the IE choice "DL parameters" is set to 'same as UL':
  - 5> if the IE "UL DCH TFCS identity" indicates an existing or a new UL TFCS:
    - 6> store for that DL TFCS the TFCS identified by the IE "UL DCH TFCS identity".
  - 5> else:
    - 6> set the variable INVALID\_CONFIGURATION to TRUE.

#### 8.6.5.11 Void

## 8.6.5.12 TFCS Reconfiguration/Addition Information

If the IE "TFCS Reconfiguration/Addition Information" is included the UE shall:

- 1> store the TFCs to be reconfigured/added indicated in the IE "CTFC information" as specified below;
- 1> if the IE "Power offset information" is included:
  - 2> perform actions as specified in [29].

In order to identify the TFCs included in this IE the UE shall calculate the CTFC as specified in subclause 14.10.

- 1> if the IE "Additional Dynamic Transport Format Information for CCCH" was included in the IE "RACH TFS":
  - 2> ignore for the CTFC calculation any TF added by the IE "Additional Dynamic Transport Format Information for CCCH".

If the IE "TFCS Reconfiguration/Addition Information" is used in case of TFCS "Complete reconfiguration" the UE shall:

- 1> remove a previously stored transport format combination set if this exists;
- 1> consider the first instance of the IE "CTFC information" as Transport Format Combination 0 in FDD (TFCI=0) and 1 in TDD (TFCI=1), the second instance as Transport Format Combination 1 in FDD (TFCI=1) and 2 in TDD (TFCI=2) and so on. In TDD the TFCI value = 0 is reserved for physical layer use.

If the IE "TFCS Reconfiguration/Addition Information" is used in case of TFCS "Addition" the UE shall insert the new additional(s) TFC into the first available position(s) in ascending TFCI order in the TFCS.

## 8.6.5.12a Additional RACH TFCS for CCCH

If the IE "Additional RACH TFCS for CCCH" is included the UE shall:

- 1> if the IE "Power offset information" is included:
  - 2> perform actions as specified in [29].
- 1> add to the TFCS as calculated in 8.6.5.12 for the corresponding PRACH the TFC which consists of the TF added by the IE "Additional Dynamic Transport Format Information for CCCH" into the next position in ascending order after the highest TFCI value already used.

NOTE: On PRACH only one transport channel can be multiplexed.

## 8.6.5.13 TFCS Removal Information

If the IE "TFCS Removal Information" is included the UE shall:

1> remove the TFC indicated by the IE "TFCI" from the current TFCS, and regard this position (TFCI) in the TFCS as vacant.

#### 8.6.5.14 Void

## 8.6.5.15 TFCS Explicit Configuration

If the IE "TFCS Explicit Configuration" is included the UE shall:

- 1> if the IE choice "TFCS representation" is set to 'complete reconfiguration':
  - 2> perform the actions for the IE "TFCS Reconfiguration/Addition Information" as specified in subclause 8.6.5.12.
- 1> if the IE choice "TFCS representation" is set to 'addition':
  - 2> perform the actions for the IE "TFCS Reconfiguration/Addition Information" as specified in subclause 8.6.5.12.
- 1> if the IE choice "TFCS representation" is set to 'removal':
  - 2> perform the actions for the IE "TFCS Removal Information" as specified in subclause 8.6.5.13.
- 1> if the IE choice "TFCS representation" is set to 'replace':
  - 2> perform first the actions for the IE "TFCS Removal Information" as specified in subclause 8.6.5.13; and then
  - 2> perform the actions for the IE "TFCS Reconfiguration/Addition Information" as specified in subclause 8.6.5.12.

# 8.6.5.16 E-DCH Transmission Time Interval (FDD only)

If the IE "E-DCH Transmission Time Interval" is included, the UE shall:

- 1> store the received TTI;
- 1> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

When the variable E DCH TRANSMISSION is set to TRUE the UE shall:

1> apply the TTI as signalled in the IE "E-DCH Transmission Time Interval" on the E-DPDCH.

If the received "E-DCH Transmission Time Interval" is 2 ms and the previously stored TTI was 10 ms:

1> not send any data on E-DPDCH in first 8 TTIs after activation time of new TTI.

# 8.6.5.17 HARQ Info for E-DCH

If the IE "HARQ Info for E-DCH" is included, the UE shall:

- 1> store the received configuration;
- 1> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

When the variable E\_DCH\_TRANSMISSION is set to TRUE the UE shall:

1> use a redundancy version for each HARQ transmission as configured by the IE "HARQ RV Configuration".

# 8.6.5.18 Added or reconfigured E-DCH MAC-d flow

If the IE "Added or reconfigured E-DCH MAC-d flow" is included, the UE shall:

- 1> if the IE "E-DCH MAC-d flow power offset" is included:
  - 2> configure the power offset indicated in the IE "E-DCH MAC-d flow power offset" for the E-DCH MAC-d flow identified by the IE "E-DCH MAC-d flow identity".
- 1> if the IE "E-DCH MAC-d flow maximum number of retransmissions" is included:
  - 2> configure the maximum number of retransmissions indicated in the IE "E-DCH MAC-d flow maximum number of retransmissions" for the E-DCH MAC-d flow identified by the IE "E-DCH MAC-d flow identity".
- 1> for 1.28 Mcps TDD, if the IE "E-DCH MAC-d flow retransmission timer" is included:
  - 2> configure the retransmission timer for the E-DCH MAC-d flow identified by the IE "E-DCH MAC-d flow identity".
- 1> if the IE "E-DCH MAC-d flow multiplexing list" is included:
  - 2> only multiplex MAC-d PDU's from the E-DCH MAC-d flow indicated in the IE "E-DCH MAC-d flow identity" with MAC-d PDU's from E-DCH MAC-d flows with which multiplexing in the same MAC-e PDU is allowed in accordance to the IE "E-DCH MAC-d flow multiplexing list".

#### 1> else:

- 2> if previously the IE "E-DCH MAC-d flow multiplexing list" was already received for this E-DCH MAC-d flow:
  - 3> continue to only multiplex E-DCH PDU's from the E-DCH MAC-d flow indicated in the IE "E-DCH MAC-d flow identity" with MAC-d PDU's from E-DCH MAC-d flows with which multiplexing in the same MAC-e PDU is allowed according to the previously received IE "E-DCH MAC-d flow multiplexing list".
- 2> else (never received the IE "E-DCH MAC-d flow multiplexing list" for this E-DCH MAC-d flow):
  - 3> allow multiplexing of MAC-d PDU's from the E-DCH MAC-d flow indicated in the IE "E-DCH MAC-d flow identity" with MAC-d PDU's from any other E-DCH MAC-d flow in the same MAC-e PDU.

#### 1> for FDD:

- 2> if the IE "Non-scheduled transmission grant info" is included:
  - 3> if the TTI configured on the E-DCH equals 2ms, and the IE "2ms non-scheduled transmission grant HARQ process allocation" is configured for this MAC-d flow:
    - 4> MAC-d PDU's for logical channels belonging to this MAC-d flow shall only be included in a MAC-e PDU transmitted by HARQ processes allowed by the IE "2ms non-scheduled transmission grant HARQ process allocation", with a total contribution from this MAC-d flow (i.e. including MAC-e/es headers) not exceeding the size as signalled by the IE "Max MAC-e PDU contents size".

#### 3> else:

- 4> MAC-d PDU's for logical channels belonging to this MAC-d flow shall be included in a MAC-e PDU transmitted by any HARQ process, with a total contribution from this MAC-d flow (i.e. including MAC-e/es headers) not exceeding the size as signalled by the IE "Max MAC-e PDU contents size".
- 2> if the IE "Scheduled transmission grant info" is included:
  - 3> transmission of MAC-d PDU's for logical channels belonging to this MAC-d flow shall be in accordance with the received scheduled grant on E-AGCH/E-RGCH (see [15]).

## 1> for TDD:

2> if the IE "Non-scheduled transmission grant info" is included:

- 3> MAC-d PDU's for logical channels belonging to this MAC-d flow shall only be included in a MAC-e PDU transmitted by HARQ processes designated as non scheduled (Ids 4 7) in the TTIs indicated (for 3.84 Mcps TDD and 7.68 Mcps TDD, as determined from the IEs "Activation Time", "Resource Duration" and "Resource Periodicity"; for 1.28 Mcps TDD, as determined from the IEs "Activation Time", "Subframe number", "Resource Duration" and "Resource Periodicity", and the calculation of assigned non-scheduled transmission grant is specified in subclause 8.6.6.16a).
- 2> if the IE "Scheduled transmission grant info" is included:
  - 3> transmission of MAC-d PDUs for logical channels belonging to this MAC-d flow shall be in accordance with the received scheduled grant on E-AGCH (see [15]).
- 1> perform the actions as specified in subclause 8.5.21;
- 1> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

# 8.6.5.19 SRB1 mapping info (FDD only)

When variable HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE or variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED are set to TRUE and the UE is in CELL\_FACH state, the UE shall:

- 1> if no MAC-ehs queue with identified by the "MAC-ehs queue identity" value as received in IE "SRB1 mapping info" of System Information Block type 5 or System Information Block type 5bis is configured:
  - 2> the UE behaviour is unspecified.
- 1> else:
  - 2> map the logical channel identified by the IE "Logical channel identity" to the MAC-ehs queue identified by the IE "MAC-ehs queue identity" as received in IE "SRB1 mapping info" of System Information Block type 5 or System Information Block type 5 bis.
- 1> if there is more than one multiplexing option applicable for logical channels to be used:
  - 2> the UE behaviour is unspecified.

# 8.6.5.20 HARQ System Info (FDD only)

When the UE is not in RRC Connected state and variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED is set to TRUE, or when the UE is in CELL\_FACH state or will be in CELL\_FACH state at the completion of this procedure, the UE shall:

- 1> if IE "HS-DSCH common system information" is included in System Information Block type 5 or System Information Block type 5bis:
  - 2> configure the MAC-ehs entity with the number of HARQ processes indicated in IE "Number of Processes";
  - 2> assign to each of these HARQ processes IDs going from 0 to "Number of Processes" 1;
  - 2> if the IE "Memory Partitioning" is set to 'Implicit':
    - 3> partition the soft memory buffer in the MAC-ehs entity equally among the processes configured above. In the event that the division of the soft memory buffer results in a non-Integer value the partition memory size is rounded down to the nearerst Integer value.
  - 2> if the IE "Memory Partitioning" is set to 'Explicit':
    - 3> if the UE capability "Total number of soft channel bits in HS-DSCH", as specified in [35], is exceeded with this configuration:
      - 4> the UE behaviour is unspecified.
    - 3> else:

4> partition the soft memory buffer in the MAC-ehs entity according to the IE "Process memory size" assuming that the order in the list follows the order in the HARQ process IDs.

# 8.6.5.21 CCCH mapping info (FDD only)

When variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED is set to TRUE, the UE shall:

- 1> if no MAC-ehs queue with identified by the "MAC-ehs queue identity" value as received in IE "CCCH mapping info" of System Information Block type 5 or System Information Block type 5bis is configured:
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> else:
  - 2> map the logical channel identified by the IE "Logical channel identity" to the MAC-ehs queue identified by the IE "MAC-ehs queue identity" as received in IE "CCCH mapping info" of System Information Block type 5 or System Information Block type 5bis.
- 1> if there is more than one multiplexing option applicable for logical channels to be used:
  - 2> the UE behaviour is not specified.

# 8.6.5.22 Common MAC-ehs reordering queue (FDD only)

When variable HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED is set to TRUE, the UE shall:

- 1> set the release timer for the MAC-ehs queue in the MAC-ehs entity to the value in the corresponding IE "T1";
- 1> set the reset timer for the MAC-ehs queue in the MAC-ehs entity to the value in te corresponding IE "Treset";
- 1> set the MAC-ehs receiver window size for the MAC-ehs queues in the MAC-ehs entity to the value in the corresponding IE "MAC-ehs window size".

#### 8.6.5.23 Added or reconfigured MAC-ehs reordering gueue

If the IE "Added or reconfigured MAC-ehs reordering queue" is included, the UE shall:

- 1> if the IE "Deleted DL TrCH information" is included in the received message; and
- 1> if a MAC-ehs queue (identified by the IE "MAC-ehs queue Id") is included in both the IE "MAC-ehs queue to add or reconfigure list" and the IE "DL HS-DSCH MAC-ehs reordering queue" within the IE "Deleted DL TrCH information":
  - 2> the UE behaviour is unspecified.
- 1> for each MAC-ehs queue included in the IE "MAC-ehs queue to add or reconfigure" list:
  - 2> set the release timer for each of the MAC-ehs queues in the MAC-ehs entity to the value in the corresponding IE "T1";
  - 2> set the reset timer for the MAC-ehs queue in the MAC-ehs entity to the value in te corresponding IE "Treset":
- NOTE: A UE that does not support reception of HS-DSCH in CELL\_FACH state may ignore the IE "Treset".
  - 2> set the MAC-ehs receiver window size for each of the MAC-ehs queues in the MAC-ehs entity to the value in the corresponding IE "MAC-ehs window size".
- 1> if the IE "Added or reconfigured MAC-ehs reordering queue" is considered valid according to the rules above:
  - 2> perform the actions as specified in subclause 8.5.21.

# 8.6.6 Physical channel information elements

This subclause specifies the actions upon reception and/or non-reception of the physical channel information elements. The combination of the values of those information elements included in a given message shall follow the compatibility rules that are specified in the physical layer specifications. In case those rules are not followed, the UE shall set the variable INVALID\_CONFIGURATION to TRUE.

## 8.6.6.1 Frequency info

If, after completion of the procedure, the UE will be in CELL\_DCH state, the UE shall:

- 1> for FDD, 3.84 Mcps TDD and 7.68 Mcps TDD, if the IE "Frequency info" is included; or
- 1> for 1.28 Mcps TDD, if the IE "Frequency info" is included and the "Second Frequency info" is not included:
  - 2> if the frequency is different from the currently used frequency:
    - 3> store and use the frequency indicated by the IE "Frequency Info";
    - 3> if the received message is used to perform a Timing-maintained hard handover (see subclause 8.3.5.2), and IE "Timing maintained Synchronization indicator" is included:
      - 4> not perform any physical layer synchronisation procedure (FDD only);
    - 3> else:
      - 4> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).
  - 2> if the frequency is the same as the currently used frequency:
    - 3> continue to use the currently used frequency;
    - 3> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).
- 1> for 1.28 Mcps TDD, if both the IE "Frequency info" and the IE "Second Frequency info" are included:
  - 2> the frequency in IE "Frequency info" is used as the primary frequency, and the frequency in IE "Second Frequency info" is used as the secondary frequency;
  - 2> store the primary frequency;
  - 2> if the secondary frequency is different with the currently used frequency:
    - 3> store and use the secondary frequency.
  - 2> if the secondary frequency is the same as the currently used frequency:
    - 3> continue to use the currently used frequency.
- 1> if the IE "Frequency info" is not included and the UE has a currently used frequency:
  - 2> continue to use the currently used frequency;
- NOTE If the received message is used to perform a Timing-reinitialised hard handover, and the IE "Frequency Info" is not included, the UE may perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

## 8.6.6.2 Void

## 8.6.6.2a PNBSCH allocation

The UE shall consider the frame numbers fulfilling the following equation as "PRACH blocked frames" as specified in [33].

 $SFN = \lfloor k * Repetition period \rfloor$ 

for an integer k with k {0, 1, 2, 3, 4, ..., value of IE "Number of repetitions per SFN period" - 1}, where:

Repetition period is: 4096 / value of IE "Number of repetitions per SFN period".

The UE shall configure the physical layer for the physical random access procedure accordingly.

#### 8.6.6.3 Void

## 8.6.6.3a Downlink information per radio link list

If the IE "Downlink information per radio link list" is included in a received message, the UE shall:

- 1> if the active set resulting after the reception of the IE "Downlink information per radio link list" would contain radio links indicated by the IE "Downlink DPCH info for each RL" and radio links indicated by the IE "Downlink F-DPCH info for each RL":
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the message was received in CELL\_DCH state and the UE remains in CELL\_DCH state according to subclause 8.6.3.3 applied on the received message:
  - 2> for FDD, check whether the radio links included in the IE "Downlink information per radio link list" are part of the current active set considering that a radio link is uniquely identified by the downlink UARFCN and the primary scrambling code;
  - 2> for TDD, check whether the radio links included in the IE "Downlink information per radio link list" are part of the current active set considering that a radio link is uniquely identified by the UARFCN and the primary CCPCH;
  - 2> if all radio links included in the IE "Downlink information per radio link list" are part of the current active set:
    - 3> for radio links part of the current active set, and present in the IE "Downlink information per radio link list":
      - 4> update the downlink physical channel configuration according to the IE "Downlink information for each radio link" as specified in subclause 8.6.6.4.
    - 3> for radio links part of the current active set, and absent in the IE "Downlink information per radio link list":
      - 4> not change its current downlink physical channel configuration;
      - 4> For FDD, in case the IE "Serving HS-DSCH radio link indicator" is set to 'TRUE' for another radio link, no longer consider any of these absent radio links as serving HS-DSCH radio link;
      - 4> For FDD, in case the IE "Serving E-DCH radio link indicator" is set to 'TRUE' for another radio link, no longer consider any of these absent radio links as serving E-DCH radio link.
  - 2> if all radio links included in the IE "Downlink information per radio link list" are not part of the current active set:
    - 3> perform a hard handover by replacing all the radio links in the current active set with the radio links in the IE "Downlink information per radio link list", each with a downlink physical channel configuration according to the IE "Downlink information for each radio link" as specified in subclause 8.6.6.4;
    - 3> perform the checks on the value of the IE "Default DPCH Offset Value" as specified in subclause 8.3.5.1.2 or 8.3.5.2.2;
    - 3> act on the IE "Timing indication" and the IE "Default DPCH Offset Value", if included, as specified in subclause 8.5.15.2;

NOTE: UTRAN should not mix radio links which are part of the current active set and radio links which are not part of the current active set in the same IE "Downlink information per radio link list". In such cases the UE behaviour is unspecified.

#### 1> otherwise:

- 2> if the message was received in CELL\_FACH state and the UE would transit to CELL\_DCH state according to subclause 8.6.3.3 applied on the received message:
  - 3> establish a downlink physical channel configuration for each of the included radio links according to the IE "Downlink information for each radio link" as specified in subclause 8.6.6.4.

## 8.6.6.4 Downlink information for each radio link

If the IE "Downlink information for each radio link" is included in a received message, the UE shall:

- 1> if the UE would enter CELL\_DCH state according to subclause 8.6.3.3 applied on the received message:
  - 2> if the UE is in TDD mode and shared transport channels are assigned to the UE:
    - 3> start to receive the indicated Secondary CCPCH.
  - 2> if the UE is in TDD mode and no shared transport channels are assigned to the UE:
    - 3> set the variable UNSUPPORTED\_CONFIGURATION to TRUE.
  - 2> For FDD:
    - 3> if the IE "Serving HS-DSCH radio link indicator" is set to 'TRUE':
      - 4> consider this radio link as the serving HS-DSCH radio link and no longer consider any other radio link as serving HS-DSCH radio link.
  - 2> For FDD:
    - 3> if the IE "Serving E-DCH radio link indicator" is set to 'TRUE':
      - 4> consider this radio link as the serving E-DCH radio link and no longer consider any other radio link as serving E-DCH radio link.
    - 3> if the IE "E-AGCH Info" is included for the serving E-DCH radio link:
      - 4> store the newly received E-AGCH configuration.
      - NOTE: The UTRAN should always include the IE "E-AGCH info" if the serving E-DCH radio link indicated in the message is another radio link than the serving E-DCH radio link prior to the procedure.
    - 3> if the IE "E-HICH information" is included:
      - 4> store this E-HICH configuration for the concerning radio link.
    - 3> if the IE "E-HICH information" is included or previously stored:
      - 4> store this E-RGCH configuration for the concerning radio link, if included.
    - 3> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.
  - 2> for TDD:
    - 3> if the IE "E-AGCH Info" is included:
      - 4> store the newly received E-AGCH configuration.
    - 3> if the IE "E-HICH information" is included:

- 4> store the E-HICH configuration.
- 3> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.
- 2> act on the other IEs contained in the IE "Downlink information for each radio link" as specified in subclause 8.6 applied on this radio link.
- 1> in addition, if the message was received in CELL\_DCH state and the UE remains in CELL\_DCH state according to subclause 8.6.3.3 applied on the received message:
  - 2> For FDD:
    - 3> if the IE "Serving HS-DSCH radio link indicator" is set to 'TRUE':
      - 4> consider this radio link as the serving HS-DSCH radio link;
      - 4> if the serving HS-DSCH radio link was another radio link than this radio link prior to reception of the message and the IE "H-RNTI" is not included:
        - 5> clear the variable H\_RNTI.
    - 3> if the IE "Serving HS-DSCH radio link indicator" is set to 'FALSE' and this radio link was considered the serving HS-DSCH radio link prior to reception of this message:
      - 4> no longer consider this radio link as the serving HS-DSCH radio link.
    - 3> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25;
    - 3> if the IE "Serving E-DCH radio link indicator" is set to 'TRUE':
      - 4> consider this radio link as the serving E-DCH radio link;
      - 4> if the serving E-DCH radio link was another radio link than this radio link prior to reception of the message:
        - 5> if the IE "New Primary E-RNTI" is not included:
          - 6> clear the Primary E-RNTI stored in the variable E\_RNTI.
        - 5> if the IE "New Secondary E-RNTI" is not included:
          - 6> clear the Secondary E-RNTI stored in the variable E\_RNTI.
    - 3> if the IE "Serving E-DCH radio link indicator" is set to 'FALSE' and this radio link was considered the serving E-DCH radio link prior to reception of this message:
      - 4> no longer consider this radio link as the serving E-DCH radio link.
    - 3> if the IE "E-HICH release indicator" is present:
      - 4> delete the stored E-HICH, E-AGCH and E-RGCH (if any) configurations.
    - 3> if the IE "E-RGCH release indicator" is present:
      - 4> delete the stored E-RGCH configuration for this RL.
    - 3> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.
  - 2> For TDD:
    - 3> if the IE "H-RNTI" is not included and the primary CCPCH has changed:
      - 4> clear the variable H\_RNTI.

- 3> determine the value for the HS-DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.
- 2> for TDD:
  - 3> if the IE "New Primary E-RNTI" is not included:
    - 4> clear the variable E\_RNTI.
  - 3> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.
- 2> for each optional IE part of the IE "Downlink information for each radio link" that is not present:
  - 3> do not change its current downlink physical channel configuration corresponding to the IE, which is absent, if not stated otherwise elsewhere.
- NOTE: The Release '99 RADIO BEARER RECONFIGURATION message always includes at least one IE "Downlink information for each radio link" containing the mandatory IEs, even if UTRAN does not require the reconfiguration of any radio link.
- 1> if the UE would enter either the CELL\_FACH, CELL\_PCH or URA\_PCH state according to subclause 8.6.3.3 applied on the received message:
  - 2> if IEs other than the IE "Primary CPICH info" (for FDD) or the IE "Primary CCPCH info" (for TDD) are included in the IE "Downlink information for each radio link":
    - 3> ignore these IEs.
  - 2> act on the other IEs contained in the IE "Downlink information for each radio link" as specified in subclause 8.6 applied on this radio link.

#### 8.6.6.5 Void

## 8.6.6.6 Uplink DPCH info

If the IE "Uplink DPCH info" is included, the UE shall:

#### For FDD:

- 1> release any active uplink physical channels and activate the given physical channels;
- 1> if the IE "Number of FBI bits" is not included:
  - 2> use 0 FBI bits in the Uplink DPCH.
- 1> if the IE "Number of TPC bits" is not included:
  - 2> use 2 TPC bits in the Uplink DPCH.
- 1> else:
  - 2> if F-DPCH is not configured then the UE behaviour is unspecified.
- 1> use an SF equal to or greater than the minimum SF indicated in the IE "Spreading Factor" during uncompressed frames or compressed frames by HL scheduling;
- 1> use an SF equal to or greater than the minimum SF divided by 2 during compressed frames by SF reduction.

#### For TDD:

1> release the uplink physical channels associated with any CCTrCH that is removed or reconfigured and activate the physical channels assigned to any CCTrCH that is added or reconfigured;

- 1> for 3.84 Mcps TDD or 7.68 Mcps TDD use the IE "UL target SIR" specified for each added or reconfigured CCTrCH as described in subclause 8.5.7. For 1.28 Mcps TDD use the value of IE "UL target SIR" specified for each added or reconfigured CCTrCH for parameter PRX<sub>DPCHdes</sub> as described in subclause 8.5.7;
- 1> for 1.28 Mcps TDD:
  - 2> if "PLCCH Info" is included then store PLCCH Info parameters with respect to this uplink DPCH (overwriting parameter values previously stored);
    - 2> if "PLCCH Info" is not included then delete the PLCCH Info stored with respect to this uplink DPCH.
- 1> use the parameters of the IE "Time info" for each added or reconfigured CCTrCH;
- 1> if present, use the IE "Uplink Timing Advance Control" as specified in subclause 8.6.6.26.

## 8.6.6.7 Void

# 8.6.6.8 Maximum allowed UL TX power

If the IE "Maximum allowed UL TX power" is included in the Handover to UTRAN Command, in any other dedicated message or in System Information Block type 3 or in System Information Block 4, the UE shall:

1> store and use the value until it is updated.

If the IE "Maximum allowed UL TX power" was not included in any dedicated message, the UE shall:

1> use the value previously stored, when received in an earlier dedicated message, Handover to UTRAN Command message or received in System Information Block type 3 or in System Information Block 4.

For all cases, the UE shall:

- 1> keep the UE uplink transmit power at or below the indicated power value;
- 1> if the current UE uplink transmit power is above the indicated power value:
  - 2> decrease the power to a level at or below the power value.

The maximum UE TX power is defined as the lower of the maximum output power of the UE power class and the maximum allowed UL TX power indicated in this IE. The maximum UE TX power shall not be exceeded.

8.6.6.9 Void

8.6.6.10 Void

## 8.6.6.11 Uplink DPCH power control info

The UE shall:

1> in FDD:

- 2> if the IE "Uplink DPCH power control info" is included:
  - 3> if a synchronisation procedure A is performed according to [29]:
    - 4> calculate and set an initial uplink transmission power;
    - 4> start inner loop power control as specified in subclause 8.5.3;

- 4> for the UL inner loop power control:
  - 5> use the parameters specified in the IE.
- 3> else:
  - 4> ignore the IEs "DPCCH Power offset", "PC Preamble" and "SRB delay";
  - 4> act on the IE "Power control algorithm" and the IE "TPC step size", if included.
- 3> act on the IEs " $\Delta_{ACK}$ ", " $\Delta_{NACK}$ " and "Ack-Nack repetition factor", if included;
- 3> use the procedure for transmitting HS-DPCCH preamble and postamble according to [29], if the IE "HARQ\_preamble\_mode" is set to 1.
- 1> in 3.84 Mcps TDD or 7.68 Mcps TDD:
  - 2> if the IE "Uplink DPCH power control info" is included:
    - 3> use the parameters specified in the IE for open loop power control as defined in subclause 8.5.7.
  - 2> else:
    - 3> use the current uplink transmission power.
- 1> in 1.28 Mcps TDD:
  - 2> if the CHOICE UL OL PC info is set to 'Broadcast UL OL PC info':
    - 3> set the variable INVALID\_CONFIGURATION to true.
  - 2> if the IE "Uplink DPCH power control info" is included in the UPLINK PHYSICAL CHANNEL CONTROL message:
    - 3> use "Beacon PL Est." and the TPC step size for the closed loop power control of the CCTrCH identified in the message, replacing the existing value used for the CCTrCH.
    - 3> if the IE " UL target SIR " is included:
      - 4> use this value for parameter PRX<sub>DPCHdes</sub> for open loop power control of the CCTrCH identified in the message in the case of a transition from closed loop to open loop power control as specified in [33].
  - 2> if the IE "Uplink DPCH power control info" is included in the IE "Uplink DPCH info":
    - 3> use the "Beacon PL Est." and TPC step size for the closed loop power control of all CCTrCH added or reconfigured by the IE replacing any existing values used for the CCTrCHs;
    - 3> if the IE " UL target SIR " is included ignore the parameter.
- 1> both in FDD and TDD;
  - 2> if the IE "Uplink DPCH power control info" is not included in a message used to enter CELL\_DCH:
    - 3> set the variable INVALID\_CONFIGURATION to true.
- 1> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

## 8.6.6.12 Secondary CPICH info

If the IE Secondary CPICH info is included, the UE may:

- 1> use the channelisation code according to IE "channelisation code", with scrambling code according to IE "DL scrambling code" in the IE "Secondary CPICH info", for channel estimation of that radio link;
- 1> use the pilot bits on DPCCH for channel estimation.

If the IE Secondary CPICH info is not included, the UE shall:

1> not use any previously stored configuration corresponding to the usage of the Secondary CPICH info.

## 8.6.6.13 Primary CPICH usage for channel estimation

If the IE "Primary CPICH usage for channel estimation" is included and has the value "Primary CPICH may be used" the UE:

- 1> may use the Primary CPICH for channel estimation;
- 1> may use the pilot bits on DPCCH for channel estimation.

NOTE: If the IE "Primary CPICH usage for channel estimation" has the value "Primary CPICH shall not be used" and the IE "Secondary CPICH info" is not included for that radio link then the UE behaviour is not specified.

If the IE "Primary CPICH usage for channel estimation" is included and has the value "Primary CPICH shall not be used" the UE:

- 1> shall not use the Primary CPICH for channel estimation;
- 1> may use the Secondary CPICH for channel estimation;
- 1> may use the pilot bits on DPCCH for channel estimation.

## 8.6.6.14 DPCH frame offset (FDD Only)

If "DPCH frame offset" is included in a message that instructs the UE to enter CELL\_DCH state:

- 1> UTRAN should:
  - 2> if only one Radio Link is included in the message:
    - 3> if the UE is configured for DPCH:
      - 4> set "Default DPCH Offset Value" and "DPCH frame offset" respecting the following relation:

(Default DPCH Offset Value) mod 38400 = DPCH frame offset

- where the IE values used are the Actual Values of the IEs as defined in clause 11.
- 3> if the UE is configured for F-DPCH:
  - 4> set "Default DPCH Offset Value" and "DPCH frame offset" respecting one of the following relations:
    - 5> (Default DPCH Offset Value) mod 38400 = DPCH frame offset; or
    - 5> (Default DPCH Offset Value+256) mod 38400 = DPCH frame offset,
      - where the IE values used are the Actual Values of the IEs as defined in clause 11.
- 2> if more than one Radio Link are included in the message:
  - 3> if the UE is configured for DPCH:
    - 4> set "Default DPCH Offset Value" and "DPCH frame offset" respecting the following relation:

(Default DPCH Offset Value) mod 38400 = DPCH frame offset<sub>j</sub>

- where *j* indicates the first radio link listed in the message and the IE values used are the Actual Values of the IEs as defined in clause 11.
- 3> if the UE is configured for F-DPCH:
  - 4> set "Default DPCH Offset Value" and "DPCH frame offset<sub>i</sub>" respecting one of the following relations:

- 5> (Default DPCH Offset Value) mod 38400 = DPCH frame offset<sub>i</sub>; or
- 5> (Default DPCH Offset Value+256) mod 38400 = DPCH frame offset<sub>i</sub>,
  - where *j* indicates the first radio link listed in the message and the IE values used are the Actual Values of the IEs as defined in clause 11.

#### 1> The UE shall:

- 2> if only one Radio Link is included in the message:
  - 3> if the UE is configured for DPCH:
    - 4> if (Default DPCH Offset Value) mod 38400 = DPCH frame offset:
      - 5> set DOFF (see subclause 8.5.15.1) to Default DPCH Offset Value.
    - 4> else:
      - 5> set the variable INVALID\_CONFIGURATION to true.
  - 3> if the UE is configured for F-DPCH:
    - 4> if (Default DPCH Offset Value) mod 38400 = DPCH frame offset:
      - 5> set DOFF (see subclause 8.5.15.1) to Default DPCH Offset Value.
    - 4> else if (Default DPCH Offset Value+256) mod 38400 = DPCH frame offset:
      - 5> set DOFF (see subclause 8.5.15.1) to Default DPCH Offset Value + 256.
    - 4> else:
      - 5> set the variable INVALID\_CONFIGURATION to true.
- 2> if more than one Radio Links are included in the message:
  - 3> if the UE is configured for DPCH:
    - 4> if (Default DPCH Offset Value) mod 38400 = DPCH frame offset<sub>i</sub>,
      - where *j* indicates the first radio link listed in the message:
      - 5> set DOFF (see subclause 8.5.15.1) to Default DPCH Offset Value.
    - 4> else:
      - 5> set the variable INVALID\_CONFIGURATION to true.
  - 3> if the UE is configured for F-DPCH:
    - 4> if (Default DPCH Offset Value) mod 38400 = DPCH frame offset<sub>i</sub>,
      - where *j* indicates the first radio link listed in the message:
      - 5> set DOFF (see subclause 8.5.15.1) to Default DPCH Offset Value.
    - 4> else if (Default DPCH Offset Value+256) mod 38400 = DPCH frame offset<sub>j</sub>,
      - where *j* indicates the first radio link listed in the message:
      - 5> set DOFF (see subclause 8.5.15.1) to Default DPCH Offset Value + 256.
    - 4> else:
      - 5> set the variable INVALID\_CONFIGURATION to true.

If the IE "DPCH frame offset" is included the UE shall:

1> use its value to determine the beginning of the DPCH or F-DPCH frame.

## 8.6.6.15 DPCH Compressed mode info

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires UL compressed mode, and CHOICE 'UL/DL mode' indicates 'DL only':
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires DL compressed mode, and CHOICE 'UL/DL mode' indicates 'UL only':
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require UL compressed mode for any of supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'UL only' or 'UL and DL':
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require DL compressed mode for any supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'DL only' or 'UL and DL':
  - 2> set the variable INVALID\_CONFIGURATION to TRUE.
- 1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active (according to the IE "Current TGPS Status Flag" in variable TGPS\_IDENTITY) after the new configuration has been taken into use:
  - 2> set the variable INVALID CONFIGURATION to TRUE.
- 1> if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
  - 2> the UE behaviour is unspecified.

If variable INVALID\_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS\_IDENTITY):
  - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
    - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
    - 3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS\_IDENTITY to "inactive" at the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
  - 2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
    - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
- NOTE1: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

- NOTE2: The deactivation of pattern sequences only occurs as a result of RRC messages received by the UE, i.e. the UE does not set the "Current TGPS Status Flag" to "inactive" after the final gap of a finite length pattern sequence.
- 1> update each pattern sequence to the variable TGPS\_IDENTITY according to the IE "TGPSI";
- 1> update into the variable TGPS\_IDENTITY the configuration information defined by IE group" transmission gap pattern sequence configuration parameters ";
- 1> if an F-DPCH is configured:
  - 2> not use the IEs "Downlink compressed mode method", "Downlink frame type", "DeltaSIR1", "DeltaSIRafter1", and if included, the IEs "DeltaSIR2", "DeltaSIRafter2".
- 1> after the instant in which the message is to be executed, as specified in subclause 8.6.3.1:
  - 2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in the variable TGPS\_IDENTITY is set to "activate" at the time indicated by IE "TGCFN"; and
  - 2> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS\_IDENTITY to "active".
- NOTE1: If the pattern is activated with a message that includes the IE "Activation time", and if the CFN value indicated by the IE "Activation Time" and the CFN value indicated by the TGCFN are included in the same TTI (but not at the TTI boundary) common to all the transport channels that are multiplexed onto the reference CCTrCh (as defined in subclause 8.6.3.1), and if the CFN value indicated by the TGCFN is equal or higher than the CFN value indicated by the IE "Activation Time" (as defined in subclause 8.6.3.1) value, the UE behaviour is not specified.
- NOTE2: If the pattern is activated with a message used to perform timing re-initialised hard handover, the UE can start evaluating the activation of the pattern (i.e. compare the value of the CFN in the new configuration with the value of the TGCFN) at any time between the message activation time and the completion of the synchronisation procedure A.
  - 2> if the IE "DPCH compressed mode info" is included in a message used to perform a Hard Handover with change of frequency (see subclause 8.3.5); or
  - 2> if the IE "DPCH compressed mode info" is included in a message used to transfer the UE from Cell\_FACH to Cell\_DCH, and the cell in which the UE transited from CELL\_FACH state is not included in the active set for the CELL\_DCH state (see subclause 8.4.1.7.2):
    - 3> not begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.
  - 2> else:
    - 3> begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.
  - 2> begin the inter-RAT measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
  - 2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":
    - 3> start the concerned pattern sequence immediately at that CFN.
- 1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in subclause 8.2.11.2.

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is not included, the UE shall:

- 1> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IEs "TGMP" and "Current TGPS Status Flag" in variable TGPS\_IDENTITY):
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

- 1> if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
  - 2> the UE behaviour is unspecified.
- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS\_IDENTITY):
  - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
    - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use:
    - 3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS\_IDENTITY to "inactive" at the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
  - 2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
    - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
- NOTE1: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.
- NOTE2: The deactivation of pattern sequences only occurs as a result of RRC messages received by the UE, i.e. the UE does not set the "Current TGPS Status Flag" to "inactive" after the final gap of a finite length pattern sequence.
- 1> after the instant in which the message is to be executed, as specified in subclause 8.6.3.1:
  - 2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate" at the time indicated by IE "TGCFN"; and
- NOTE1: If the pattern is activated with a message that includes the IE "Activation time", and if the CFN value indicated by the IE "Activation Time" and the CFN value indicated by the TGCFN are included in the same TTI (but not at the TTI boundary) common to all the transport channels that are multiplexed onto the reference CCTrCh (as defined in subclause 8.6.3.1), and if the CFN value indicated by the TGCFN is equal or higher than the CFN value indicated by the IE "Activation Time" (as defined in subclause 8.6.3.1) value, the UE behaviour is not specified.
- NOTE2: If the pattern is activated with a message used to perform timing re-initialised hard handover, the UE can start evaluating the activation of the pattern (i.e. compare the value of the CFN in the new configuration with the value of the TGCFN) at any time between the message activation time and the completion of the synchronisation procedure A.
  - 2> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS\_IDENTITY to "active";
  - 2> if the IE "DPCH compressed mode info" is included in a message used to perform a Hard Handover with change of frequency (see subclause 8.3.5); or
  - 2> if the IE "DPCH compressed mode info" is included in a message used to transfer the UE from Cell\_FACH to Cell\_DCH, and the cell in which the UE transited from CELL\_FACH state is not included in the active set for the CELL\_DCH state (see subclause 8.4.1.7.2):
    - 3> not begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.

#### 2> else:

- 3> begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.
- 2> begin the inter-RAT measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

- 2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":
  - 3> start the concerned pattern sequence immediately at that CFN.

For transmission gap pattern sequences stored in variable TGPS\_IDENTITY, but not identified in IE "TGPSI" (either due to the absence of the IE "DPCH compressed mode info" in the received message or due to not receiving the corresponding TGPSI value in the IE "DPCH compressed mode info"), the UE shall:

- 1> if the received message implies a timing re-initialised hard handover (see subclause 8.3.5.1):
  - 2> deactivate such transmission gap pattern sequences at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message; and
  - 2> set IE "Current TGPS Status Flag" in corresponding UE variable TGPS\_IDENTITY to 'inactive'.
- 1> if the received message not implies a timing re-initialised hard handover (see subclause 8.3.5.1):
  - 2> continue such transmission gap pattern sequence according to IE "Current TGPS Status Flag" in the corresponding UE variable TGPS\_IDENTITY.

Uplink and downlink compressed mode methods are described in [27]. For UL "higher layer scheduling" compressed mode method and transport format combination selection, see [15].

## 8.6.6.16 Repetition period, Repetition length, Offset (TDD only)

In case the physical allocations of different channels overlap the following priority rules shall apply for common channels and shall be taken into account by the UE:

- 1> PICH takes precedence over Primary CCPCH;
- 1> PICH takes precedence over Secondary CCPCH;
- 1> MICH takes precedence over Primary CCPCH;
- 1> MICH takes precedence over Secondary CCPCH;
- 1> Secondary CCPCH takes precedence over Primary CCPCH.

The frame allocation can be derived by following rules:

If no IE "Offset" is explicitly given, the parameter "Offset" to be used is calculated by the following equation:

Activation time mod Repetition period = Offset.

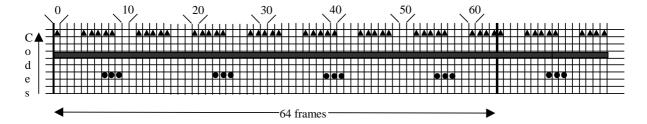
Frames from CFN CFN $_{\rm off}$  to CFN $_{\rm off}$  + Repetition length - 1 belong to the allocation with CFN $_{\rm off}$  fulfilling the following equation:

CFN<sub>off</sub> mod Repetition period = Offset.

Repetition length is always a multiple of the largest TTI within the CCTrCH fulfilling the following equation:

(largest TTI within CCTrCH) \* X = Repetition Length

Example of usage:



- $\blacktriangle$  physic. channel (Code 7; Repetition period=8; Repetition length=5; Activation time =  $4 \Rightarrow$  Offset =  $4 \Rightarrow$  CFN<sub>off</sub> = 4, 12, 20, 28, 36, 44, 52, 60)
- physic. channel (Code 5; Repetition Period=1 => Repetition length=0; Offset = 0 =>  $CFN_{off} = 0, 1, 2, 3, 4, ...$  (continuous allocation))
- physic. channel (Code 3; Repetition period=16; Repetition length=3; Activation time = 23 =>Offset = 7 => CFN<sub>off</sub> = 7, 23, 39, 55)

Figure 8.6.6.16-1: Examples for frame allocations in TDD

# 8.6.6.16a Repetition period, Repetition length, Offset<sub>sub</sub> (1.28 Mcps TDD non-scheduled transmission only)

The subframes, i.e. TTI in 5ms, of non-scheduled E-PUCH allocated can be determined from "Activation Time", "Subframe number", "Resource Duration" and "Resource Periodicity" as below:

The parameter "Offset sub" is defined to denote the offset of assigned E-PUCH physical resource within each Repetition period and numerated in subframe number.

"Offset sub" to be used is calculated by the following equation:

(Activation time\* 2+ Subframe number) mod Repetition period = Offset sub.

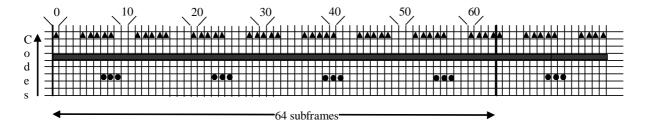
Here, a new term subCFN is defined to represent the Subframe within a specified CFN, and subCFN within a specified CFN is counted as below:

CFN\* 2+ Subframe number = subCFN.

 $SubFrames\ from\ subCFN_{off}\ to\ subCFN_{off}\ +\ Repetition\ length\ -\ 1\ belong\ to\ the\ allocation\ with\ subCFN_{off}\ fulfilling\ the\ following\ equation:$ 

subCFN<sub>off</sub> mod Repetition period = Offset sub.

Example of usage:



- physic. channel (Code 7; Repetition period=8; Repetition length=5; Activation time = 2; Subframe number=0 => Offset<sub>sub</sub> = 4 => subCFN<sub>off</sub> = 4, 12, 20, 28, 36, 44, 52, 60)
- physic. channel (Code 5; Repetition Period=1 => Repetition length=0; => subCFN<sub>off</sub>= 0, 1, 2, 3, 4, ... (continuous allocation))
- physic. channel (Code 3; Repetition period=16; Repetition length=3; Activation time = 11; Subframe number=1; =>Offset<sub>sub</sub> = 7 => subCFN<sub>off</sub> = 7, 23, 39, 55)

Figure 8.6.6.16a-1: Examples for subframe allocations in TDD

## 8.6.6.17 Primary CCPCH info

If the IE "Primary CCPCH info" is included, the UE shall:

1> use the information elements in this IE.

## 8.6.6.18 Primary CPICH info

If the IE "Primary CPICH info" in FDD is included, the UE shall:

1> use the value of this IE as the primary scrambling code for the downlink radio link.

8.6.6.19 Void

8.6.6.20 Void

8.6.6.21 Void

## 8.6.6.22 Secondary Scrambling Code, Code Number

The following description applies to FDD.

Code Number can be assigned by following rules:

1> When more than one DL DPDCH is assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [27]. When *p* number of DL DPDCHs are assigned to each RL, the first pair of Secondary Scrambling Code and Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2*", and so on until the *p*th to "*PhCH number p*".

## 8.6.6.23 PDSCH Power Control info

The UE shall:

1> if the IE "PDSCH Power Control info" is included:

- 2> configure PDSCH power control with the received values.
- 1> if the IE "PDSCH Power Control info" is not included:
  - 2> continue to use the stored values.

## 8.6.6.24 Tx Diversity Mode

If the IE "Tx Diversity Mode" is included the UE shall:

- 1> if the value of the IE "Tx Diversity Mode" is STTD:
  - 2> configure the Layer 1 to use the Tx diversity mode indicated in the IE "Tx Diversity Mode" for the radio links for which the IE "Closed loop timing adjustment mode" is included, ignoring the actual value of IE "Closed loop timing adjustment mode".
- 1> if the value of the IE "Tx Diversity Mode" is closed loop mode 1:
  - 2> configure the Layer 1 to use the Tx diversity mode indicated in the IE "Tx Diversity Mode" for the radio links for which the IE "Closed loop timing adjustment mode" is included, using the actual value of the IE "Closed loop timing adjustment mode".
- 1> if the value of the IE "Tx Diversity Mode" is "none":
  - 2> configure the Layer 1 not to use Tx diversity for all radio links in the active set.

If the IE "Tx Diversity Mode" is not included, the UE shall:

- 1> continue to use the already configured Tx diversity mode;
- 1> in case no Tx diversity mode has been configured:
  - 2> do not apply Tx diversity.

For F-DPCH the UE shall:

- 1> if the IE "STTD indication" is included in the IE "Downlink F-DPCH info for each RL":
  - 2> use STTD for F-DPCH on the radio links for which the IE "STTD indication" is set to TRUE.

For HS-SCCH, the UE shall:

- 1> if the DPCH associated with a HS-SCCH is using either open or closed loop transmit diversity on the radio link transmitted from the HS-DSCH serving cell:
  - 2> use STTD for this HS-SCCH;
- 1> if the F-DPCH associated with an HS-SCCH is using open loop transmit diversity on the radio link transmitted from the HS-DSCH serving cell:
  - 2> use STTD for this HS-SCCH.
- 1> otherwise:
  - 2> not use Tx diversity for this HS-SCCH.

For E-AGCH, E-RGCH, and E-HICH from the same cell, the UE shall:

- 1> for each radio link:
  - 2> if the DPCH associated with E-AGCH, E-RGCH, and E-HICH from the same cell is using either open or closed loop transmit diversity:
    - 3> use STTD for these E-AGCH, E-RGCH, and E-HICH.
  - 2> if the F-DPCH associated with E-AGCH, E-RGCH, and E-HICH from the same cell is using open loop transmit diversity:

- 3> use STTD for these E-AGCH, E-RGCH, and E-HICH.
- 2> otherwise:
  - 3> not use Tx diversity for these E-AGCH, E-RGCH, and E-HICH.

#### 8.6.6.25 Void

# 8.6.6.26 UL Timing Advance Control (TDD only)

If the IE "UL Timing Advance Control" is present, the UE shall:

- 1> if the IE "Uplink Timing Advance Control" has the value "disabled":
  - 2> reset timing advance to 0;
  - 2> disable calculated timing advance following handover;
  - 2> in case of handover:
    - 3> start uplink transmissions in the target cell without applying timing advance.
- 1> if the IE "Uplink Timing Advance Control" has the value "enabled":
  - 2> in 3.84 Mcps TDD or 7.68 Mcps TDD:
    - 3> in case of no cell change:
      - 4> evaluate and apply the timing advance value for uplink transmission as indicated in the IE "Uplink Timing Advance" or the IE "Extended Uplink Timing Advance" at the CFN indicated in the IE "Activation Time".
    - 3> in case of cell change:
      - 4> use the IE "Uplink Timing Advance" or the IE "Extended UL Timing Advance" as  $TA_{old}$  and apply  $TA_{new}$  for uplink transmission in the target cell at the CFN indicated in the IE "Activation Time" as specified in [33];
      - 4> include the value of the applied timing advance in the IE "Timing Advance" or the IE "Extended UL Timing Advance" in the COMPLETE message.

#### 2> in 1.28 Mcps TDD:

- 3> if the IE "Synchronisation parameters" is included:
  - 4> initiate a sequence of UpPCH SYNC\_UL code transmissions using a code selected from the set specified and continue until a timing correction is received in the specified FPACH (received for WT sub-frames following the sub-frame in which the transmission was made) or until Max SYNC\_UL transmissions have been completed. The power used for each SYNC\_UL transmission is as specified in subclause 8.5.7. Each transmission is made in the first sub-frame possible following the end of each FPACH reception interval using the timing specified in [33]. A new code is selected for each transmission. The detection that the FPACH relates to the transmitted SYNC\_UL code is described in [33];
  - 4> if a timing correction is received within Max SYNC\_UL transmissions the procedure is completed. The assigned uplink resources may then be used, commencing at the first possible TTI boundary or the SFN in which the assignment commences, whichever is the later. The timing of the uplink transmission is described in [33];
  - 4> if no timing correction has been received within Max SYNC\_UL transmissions, the synchronisation procedure has failed. If the assigned resources are DCH, the UE should not transmit using these resources and should respond as if a physical channel failure has occurred as specified in subclauses

8.1.3.7 or 8.2.2.7 or 8.3.1.7, or 8.3.6.5. If the assigned resources are USCH then the UE should ignore the USCH allocation.

- 3> if the IE "Synchronisation parameters" is not included:
  - 4> in case of no cell change:
    - 5> continue to use the current uplink timing.
  - 4> in case of cell change:
    - 5> evaluate and apply the timing correction TA<sub>new</sub> for uplink transmissions using the procedure as specified in [33].

# 8.6.6.26a Uplink synchronisation parameters (TDD only)

The UE shall apply uplink synchronisation using the values of the IEs "Uplink synchronisation step size" and "Uplink synchronisation frequency" as specified in [33].

#### 8.6.6.27 Downlink information common for all radio links

If the IE "Downlink information common for all radio links" is included the UE shall:

- 1> if the IE "Downlink DPCH info common for all RL" is included:
  - 2> perform actions as specified in subclause 8.6.6.28.
- 1> if the IE "Downlink F-DPCH info common for all RL" is included:
  - 2> perform actions as specified in subclause 8.6.6.28a.
- 1> if the IE choice "mode" is set to 'FDD':
  - 2> perform actions for the IE "DPCH compressed mode info" as specified in subclause 8.6.6.15;
  - 2> perform actions for the IE "Tx Diversity mode" as specified in subclause 8.6.6.24.
- 1> if the IE "MAC-hs reset indicator" is included:
  - 2> if the serving HS-DSCH radio link is the same radio link as prior to the reception of the message; and
  - 2> if, as a result of the reconfiguration message where this IE is received, the MAC header type (i.e., either MAC-hs or MAC-ehs) is unchanged:
    - 3> the UE behaviour is unspecified.
  - 2> reset the MAC-hs/ehs entity [15].

NOTE: If the MAC header type is changed, either from MAC-hs to MAC-ehs or from MAC-ehs to MAC-hs, UTRAN should include the IE "MAC-hs reset indicator" in order to ensure a reset of the MAC-hs/ehs entity in the UE prior to MAC-hs/ehs reconfiguration, otherwise the UE behaviour is unspecified.

## 8.6.6.28 Downlink DPCH info common for all radio links

If the IE "Downlink DPCH info common for all RL" is included the UE shall:

- 1> if:
  - 2> the IE "Downlink DPCH info common for all RL" is included in a reconfiguration message; and
  - 2> the UE was in CELL\_DCH state upon reception of the message and remains in CELL\_DCH state; and
  - 2> the message is not used to perform a hard handover (as specified in subclause 8.6.6.3a) and the IE "Timing indication" is set to "initialise":
    - 3> the UE behaviour is not specified.

- 1> if the IE "Downlink DPCH power control information" is included:
  - 2> in the case of FDD:
    - 3> perform actions for the IE "DPC Mode" according to [29].
  - 2> in the case of TDD:
    - 3> perform actions for the IE "TPC Step Size" according to [33].
- 1> if the IE choice "mode" is set to 'FDD':
  - 2> if the IE "Downlink rate matching restriction information" is included:
    - 3> set the variable INVALID\_CONFIGURATION to TRUE.
  - 2> perform actions for the IE "spreading factor";
  - 2> perform actions for the IE "Fixed or Flexible position";
  - 2> perform actions for the IE "TFCI existence";
  - 2> if the IE choice "SF" is set to 256:
    - 3> store the value of the IE "Number of bits for pilot bits".
  - 2> if the IE choice "SF" is set to 128:
    - 3> store the value of the IE "Number of bits for pilot bits".

If the IE "Downlink DPCH info common for all RL" is included in a message used to perform a Timing re-initialised hard handover or the IE "Downlink DPCH info common for all RL" is included in a message other than RB SETUP used to transfer the UE from a state different from Cell\_DCH to Cell\_DCH, and ciphering is active for any radio bearer using RLC-TM, the UE shall, after having activated the dedicated physical channels indicated by that IE:

- 1> if any ciphering configuration for a radio bearer using RLC-TM has not been applied, due to that the activation time from a previous procedure has not elapsed:
  - 2> apply the ciphering configuration immediately and consider the activation time from the previous procedure to be elapsed.
- 1> if the IE "MAC-d HFN initial value" is included in the IE "Downlink DPCH info common for all RL":
  - 2> set the HFN component of COUNT-C for TM-RLC to the value of the IE "MAC-d HFN initial value", while not incrementing the value of the HFN component of COUNT-C at each CFN cycle.
- NOTE: The UTRAN should choose a value for the IE "MAC-d HFN initial value" using the COUNT-C value of the RBs using RLC-TM indicated by the Source RNC to the Target RNC in the IE "SRNS Relocation Info" and include some margin in such a way that no values of COUNT-C are repeated after the handover.
- 1> else:
  - 2> set the 20 MSB of the HFN component of COUNT-C for TM-RLC to the value of the latest transmitted IE "START" or "START List" for this CN domain, while not incrementing the value of the HFN component of COUNT-C at each CFN cycle; and
  - 2> set the remaining LSBs of the HFN component of COUNT-C to zero.
- 1> start to perform ciphering on the radio bearer in lower layers while not incrementing the HFN;
- 1> include the IE "COUNT-C activation time" in the response message and specify a CFN value for this IE other than the default, "Now", that is a multiple of 8 frames (CFN mod 8 =0) and lies at least 200 frames ahead of the CFN in which the response message is first transmitted;
- 1> calculate the START value according to subclause 8.5.9;

- 1> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in the response message;
- 1> at the CFN value as indicated in the response message in the IE "COUNT-C activation time":
  - 2> set the 20 MSB of the HFN component of the COUNT-C variable common for all transparent mode radio bearers of this CN domain to the START value as indicated in the IE "START list" of the response message for the relevant CN domain; and
  - 2> set the remaining LSBs of the HFN component of COUNT-C to zero;
  - 2> increment the HFN component of the COUNT-C variable by one even if the "COUNT-C activation time" is equal to zero;
  - 2> set the CFN component of the COUNT-C to the value of the IE "COUNT-C activation time" of the response message. The HFN component and the CFN component completely initialise the COUNT-C variable;
  - 2> step the COUNT-C variable, as normal, at each CFN value, i.e. the HFN component is no longer fixed in value but incremented at each CFN cycle.

## 8.6.6.28a Downlink F-DPCH info common for all radio links

If the IE "Downlink F-DPCH info common for all RL" is included the UE shall:

- 1> if the IE "Downlink F-DPCH info common for all RL" is included in a message used to perform a hard handover:
  - 2> perform actions for the IE "Timing indication" as specified in subclause 8.5.15.2, and subclause 8.3.5.1 or 8.3.5.2.
- 1> if the IE "Downlink DPCH power control information" is included:
  - 2> perform actions for the IE "DPC Mode" according to [29].

#### 8.6.6.29 ASC setting

If the IE "ASC setting" is included, the UE shall:

- 1> establish the available signatures for this ASC as specified in the following:
  - 2> renumber the list of available signatures specified in the IE "Available signature" included in the IE "PRACH info" from signature index 0 to signature index N-1, where N is the number of available signatures, starting with the lowest available signature number and continuing in sequence, in the order of increasing signature numbers:
  - 2> consider as available signatures for this ASC the signatures included in this renumbered list from the index specified by the IE "Available signature Start Index" to the index specified by the IE "Available signature End Index".
- 1> establish the available access slot sub-channels for this ASC as specified in the following:
  - 2> if the IE "AICH transmission timing" included in the IE "AICH Info" is set to '0';
    - 3> ignore the leftmost (most significant) bit (bit b3) of the bit string specified by the IE "Assigned Sub-Channel Number";
    - 3> repeat 4 times the 3 rightmost (least significant) bits (bits b2-b0) of the bit string specified by the IE "Assigned Sub-Channel Number" to form a resulting bit string 'b2 b1 b0 b2 b1 b0 b2 b1 b0 b2 b1 b0 of length 12 bits, where the leftmost bit is the most significant.
  - 2> if the IE "AICH transmission timing" included in the IE "AICH Info" is set to '1':
    - 3> repeat 3 times the bit string (bits b3-b0) specified by the IE "Assigned Sub-Channel Number" to form a bit string 'b3 b2 b1 b0 b3 b2 b1 b0 b3 b2 b1 b0' of length 12 bits, where the leftmost bit is the most significant.

- 2> perform in both cases, for the resulting bit string (that includes the repetitions) bit-wise logical AND operation with the IE "Available Sub Channel number" included in IE "PRACH info (for RACH)";
- 2> consider as available sub-channels for this ASC the available sub-channels indicated in the resulting bit string, after logical AND operation i.e. each bit set to 1 or 0 indicates availability or non-availability, respectively, of sub-channel number x, with x from 0 to 11, for the respective ASC.
- NOTE 1: In FDD, the list of available signatures is renumbered from signature index 0 to signature index N-1, where N is the number of available signatures, starting with the lowest available signature number and continuing in sequence, in the order of increasing signature numbers.
  - List of available signatures: 16 or fewer signatures are available.
  - Example: only signatures 0, 5, 10 and 15 are available, then:
  - Signature 0 is: available signature index 0
  - Signature 5 is: available signature index 1
  - Signature 10 is: available signature index 2
  - Signature 15 is: available signature index 3
- NOTE 2: In 3.84 Mcps TDD, the list of available channelisation codes (defined in PRACH info) is renumbered from channelisation code index 0 to channelisation code index N-1, where N is the number of available channelisation codes, starting with the lowest available channelisation code number and continuing in sequence, in the order of increasing channelisation code numbers

List of available channelisation codes: 8 or less channelisation codes are available.

The i-th bit of the bitmap defined in the IE "Available Channelisation Code indices" defines whether the channelisation code with the available channelisation code index i is to be used for this ASC (bit set means used, bit unset means not used). Only the low N bits shall be used in the bitmap, where N is the number of available channelisation codes defined in PRACH info.

Ex : spreading factor 16, channelisation codes 16/1, 16/2, 16/5, 16/8 are available :

Channelisation code 16/1 is: available channelisation code index 0

Channelisation code 16/2 is: available channelisation code index 1

Channelisation code 16/5 is: available channelisation code index 2

Channelisation code 16/8 is: available channelisation code index 3

Available Channelisation Code indices has the value '00001100' means: Channelisation Codes 16/5 and 16/8 are available for this ASC.

NOTE 2a: In 7.68 Mcps TDD, the list of available channelisation codes (defined in PRACH info) is renumbered from channelisation code index 0 to channelisation code index N-1, where N is the number of available channelisation codes, starting with the lowest available channelisation code number and continuing in sequence, in the order of increasing channelisation code numbers

List of available channelisation codes: 16 or less channelisation codes are available.

The i-th bit of the bitmap defined in the IE "Available Channelisation Code indices" defines whether the channelisation code with the available channelisation code index i is to be used for this ASC (bit set means used, bit unset means not used). Only the low N bits shall be used in the bitmap, where N is the number of available channelisation codes defined in PRACH info.

Ex : spreading factor 32, channelisation codes 32/1, 32/2, 32/5, 32/8 are available :

Channelisation code 32/1 is: available channelisation code index 0

Channelisation code 32/2 is: available channelisation code index 1

Channelisation code 32/5 is: available channelisation code index 2

Channelisation code 32/8 is: available channelisation code index 3

Available Channelisation Code indices has the value '000000000001100' means: Channelisation Codes 32/5 and 32/8 are available for this ASC.

NOTE 3: In TDD, the subchannel description is found in [33].

NOTE 4: In 1.28 Mcps TDD, the list of available SYNC\_UL codes (defined in PRACH info) is numbered from SYNC\_UL code index 0 to SYNC\_UL code index N-1, where N is the number of available SYNC\_UL codes, starting with the lowest available SYNC\_UL code number and continuing in sequence, in the order of increasing SYNC\_UL code numbers

The i-th bit of the bitmap defined in the IE "Available SYNC\_UL codes indices" defines whether the SYNC\_UL code with the available SYNC\_UL code index i is to be used for this ASC (bit set means used, bit unset means not used). Only the low N bits shall be used in the bitmap, where N is the number of available SYNC\_UL codes defined in PRACH info.

- List of available SYNC\_UL codes: 8 or fewer SYNC\_UL codes are available.

Example: only signatures 0, 5, 6 and 7 are available, then:

- SYNC\_UL codes 0 is: available SYNC\_UL codes index 0
- SYNC\_UL codes 5 is: available SYNC\_UL codes index 1
- SYNC UL codes 6 is: available SYNC UL codes index 2
- SYNC UL codes 7 is: available SYNC UL codes index 3

Available SYNC\_UL codes indices has the value '00001100' means: SYNC\_UL codes 6 and 7 are available for this ASC.

## 8.6.6.30 SRB delay, PC preamble (FDD only)

When the IE "SRB delay" and IE "PC preamble" is received in a message that results in a configuration of uplink DPCH or E-DPCH, and synchronisation procedure A is being used as specified in [29], the UE shall:

- 1> store the received IE "SRB delay" and IE "PC preamble" in the variable LATEST\_CONFIGURED\_SRB\_DELAY\_AND\_PC\_PREAMBLE;
- 1> apply power control preamble according to [26] during the number of frames indicated in the IE "PC preamble"; and
- 1> then not send any data on signalling radio bearers RB0 to RB4 during the number of frames indicated in the IE "SRB delay" or while the physical channel is not considered established.

#### 8.6.6.31 Void

#### 8.6.6.32 Void

#### 8.6.6.33 HS-SCCH Info

If the IE "HS-SCCH Info" is included and the UE will be in CELL\_DCH state after completion of this procedure, the UE shall:

- 1> store the received configuration.
- 1> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

When the variable HS DSCH RECEPTION is set to TRUE the UE shall:

- 1> in the case of FDD:
  - 2> receive the HS-SCCH(s) according to the IE "HS-SCCH channelisation code" on the serving HS-DSCH radio link applying the scrambling code as received in the IE "DL Scrambling code".
- 1> in the case of TDD:

- 2> receive the HS-SCCH(s) according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.
- 2> transmit the HS-SICH according to the IEs "Timeslot Number", "Channelisation Code" and Midamble configuration IEs.
- 2> for HS-SCCH power control the UE shall use the "BLER target" signalled in the first occurrence of the "HS-SCCH Set Configuration", and the UE shall also use the IE "Power Control GAP" for 1.28 Mcps TDD.
- 2> in 3.84 Mcps TDD and 7.68 Mcps TDD:
  - 3> use the parameters specified in the IE "HS-SICH power control info" for open loop power control as defined in subclause 8.5.7.
- 2> in 1.28 Mcps TDD:
  - 3> use the IE " PRX<sub>HS-SICH</sub> " to calculate and set an initial uplink transmission power;
  - 3> use the IE " TPC step size" upon reception of TPC commands for closed loop power control;
  - 3> perform closed loop power control on HS-SICH within the interval indicated in the IE "Power Control GAP";
  - 3> use the IE "Pathloss compensation switch" to determine if the pathloss compensation from the beacon channel estimation should be taken into account for closed loop power control on HS-SICH;
  - 3> use default value of "Uplink synchronisation frequency" and same value of "Uplink synchronisation step size" in "Uplink DPCH info" for HS-SICH upon reception of SS commands for closed loop uplink synchronisation on HS-SICH.

#### 8.6.6.34 Measurement Feedback Info

If the IE "Measurement Feedback Info" is included and the UE will be in CELL\_DCH state after completion of this procedure, the UE shall:

- 1> store the received configuration;
- 1> determine the value for the HS\_DSCH\_RECEPTION variable and take the corresponding actions as described in subclause 8.5.25.

When the variable HS\_DSCH\_RECEPTION is set to TRUE the UE shall:

1> use the information for the channel quality indication (CQI) procedure in the physical layer on the serving HS-DSCH radio link.

## 8.6.6.35 DPC Mode

If the IE "DPC Mode" is included, the UE shall:

1> apply the indicated DPC mode according to [29].

If the IE "DPC Mode" is not included, the UE shall:

1> continue with the currently used DPC mode.

#### 8.6.6.36 Downlink HS-PDSCH Information

If the IE "Downlink HS-PDSCH Information" is included and the UE would be in CELL\_DCH state after completion of this procedure, the UE shall:

- 1> for 1.28 Mcps TDD, if the HS-PDSCH has been configured by the IE "DL Multi-carrier information":
  - 2> clear other stored carriers configuration in the IE "DL Multi-carrier information".
- 1> if the IE "HS-SCCH Info" is included:

- 2> act as specified in subclause 8.6.6.33.
- 1> if the IE "Measurement Feedback Info" is included:
  - 2> act as specified in subclause 8.6.6.34.
- 1> if the IE "HS-DSCH Timeslot Configuration" or "HS-PDSCH Midamble Configuration" is included:
  - 2> store the received configuration;
  - 2> determine the value for the HS\_DSCH\_RECEPTION variable and take actions as described in subclause 8.5.25.

# 8.6.6.36a DL Multi-carrier information (1.28 Mcps TDD only)

The IE "DL Multi-carrier information" is used in multiple carriers system.

NOTE: When only one frequency is configured to the UE, either the IE "DL Multi-carrier information" or the IE "Downlink HS-PDSCH Information" may be used but should use only one of them and the DPCH frequency shall be aligned with the IE "DL Multi-carrier information".

If the IE "DL Multi-carrier information" is included, the UE shall:

- 1> if the IE "TSN-Length" is included:
  - 2> store the new TSN length indicated by the IE "TSN-Length".
- 1> if the IE "TSN-Length" is not included:
  - 2> if the UE has stored TSN length:
    - 3> use the stored content of the IE.
  - 2> else:
    - 3> set the TSN length to 6bits.
- 1> if the IE "Multi-Carrier number" is included:
  - 2> store the new multiple carriers number indicated by the IE "Multi-Carrier number";
  - 2> start reception procedure on the HS-SCCHs (refer to [33]).
- 1> if the IE "DL-HSPDSCH-MultiCarrier-Information" is included:
  - 2> if the IE "HS-SCCH Set Configuration" is included:
    - 3> perform processes described in subclause 8.6.6.33.
  - 2> if the IE "HARQ-Info" is included:
    - 3> perform processes described in subclause 8.6.5.6b.
  - 2> if the IE "HS-PDSCH Midamble Configuration" is included:
    - 3> store the HS-PDSCH midamble configuraation indicated by the IE "HS-PDSCH Midamble Configuration";
    - 3> perform processes described in subclause 8.5.25.
- 1> if the carrier which has been stored by the UE is not included in the IE "DL-HSPDSCH-MultiCarrier-Information", the UE should delete all the configurations related to this carrier.

#### 8.6.6.37 E-DCH Info

If the IE "E-DCH Info" is included and the UE will be in CELL\_DCH state after completion of this procedure, the UE shall:

- 1> for FDD:
  - 2> if the IE "E-DPCCH Info" is included:
    - 3> store the newly received E-DPCCH configuration.
  - 2> if the IE "E-DPDCH Info" is included:
    - 3> store the newly received E-DPDCH configuration.
  - 2> if the IE "UL 16QAM settings" is not included:
    - 3> indicate to lower layers to stop any operation in 16QAM mode.
- 1> for 3.84/7.68 Mcps TDD:
  - 2> if the IE "E-RUCCH Info" is included:
    - 3> store the newly received E-RUCCH configuration.
  - 2> if the IE "E-PUCH Info" is included:
- NOTE 1: The UTRAN should ensure the ordering of the E-TFCI table strictly in increasing order of transmission power prior to quantization, by correct setting of the reference E-TFCI power offsets otherwise the UE behaviour is unspecified.
- NOTE 2: If a reference E-TFCI signalled to the UE is outside the UE physical channel capability, the UE behaviour is unspecified.
- NOTE 2a: If E-TFCI boost is signalled to the UE and a reference E-TFCI <= E-TFCI Boost is signalled to the UE with a Reference E-TFCI PO of value 30 or 31, the UE behaviour is unspecified.
- NOTE 2b:If the UE is configured with E-TFCI table 0 and 2ms TTI, and a reference E-TFCI =120 has been configured, the UE behavior is unspecified.
- NOTE 2c: If the UE is configured with E-TFCI table 1 and 2ms TTI, and a reference E-TFCI =115 has been configured, the UE behavior is unspecified.
- NOTE 2d:If the UE is configured with E-TFCI table 2 and 2ms TTI, and a reference E-TFCI =121 has been configured, the UE behavior is unspecified.
- NOTE 2e: If the UE is configured with E-TFCI table 3 and 2ms TTI, and a reference E-TFCI =101 or a reference E-TFCI = 102 has been configured, the UE behavior is unspecified.
- 1> if the IE "MAC-es/e reset indicator" is included:
  - 2> reset the MAC-es/e entity [15].
- NOTE 3: If the IE "MAC-es/e reset indicator" is not set to TRUE in case the IE "E-DCH Transmission Time Interval" is reconfigured, the UE behaviour is unspecified.
- NOTE 4: If the IE "MAC-es/e reset indicator" is not included in the IE "E-DCH Info" and 16QAM operation starts or stops, the UE behaviour is unspecified.
- 1> determine the value for the E\_DCH\_TRANSMISSION variable and take the corresponding actions as described in subclause 8.5.28.

When the variable E\_DCH\_TRANSMISSION is set to TRUE the UE shall:

- 1> for FDD:
  - 2> configure the UL E-DPCCH in accordance with the stored IE "E-DPCCH" configuration;
  - 2> configure the MAC with the stored IE "E-DPDCH" configuration and/or the information contained in IE "Scheduled Transmission configuration".
- 1> for TDD:

- 2> configure the E-RUCCH with the stored E-RUCCH configuration;
- 2> configure the MAC with the stored E-PUCH configuration.

## 8.6.6.38 DTX-DRX timing information (FDD only)

If the IE "DTX-DRX timing information" is included and the UE will be in CELL\_DCH state after completion of this procedure, the UE shall:

- 1> if the CHOICE "timing" is set to "New timing":
  - 2> use the newly received DTX-DRX timing configuration.
- 1> if the CHOICE "timing" is set to "Continue", and the message is used to perform a hard handover (as specified in subclause 8.6.6.3a); or
- 1> if the received message does not include the IE "DTX-DRX information" and this message will perform E-DCH TTI reconfiguration:
  - 2> the UE behaviour is unspecified.
- 1> determine the value for the DTX\_DRX\_STATUS variable and take the corresponding actions as described in subclause 8.5.34.

## 8.6.6.39 DTX-DRX information (FDD only)

If the IE "DTX-DRX information" is included and the UE will be in CELL\_DCH state after completion of this procedure, the UE shall:

- 1> store the contents of the IE in the variable DTX\_DRX\_PARAMS, replacing or clearing any previously stored "DTX Information" or "DRX Information";
- 1> determine the value for the DTX\_DRX\_STATUS variable and take the corresponding actions as described in subclause 8.5.34;
- 1> if the value of the IE "UE DTX cycle 2" is not an integer multiple of the value of the IE "UE DTX cycle 1"; or
- 1> if the value of the IE "UE DTX cycle 2" is not an integer multiple or a divisor of the value of the IE "CQI Feedback cycle, k" divided by 2; or
- 1> if the value of the IE "UE DPCCH burst 1" is greater than the value of the IE "UE DTX cycle 1"; or
- 1> if the value of the IE "UE DPCCH burst 2" is greater than the value of the IE "UE DTX cycle 2"; or
- 1> if the IE "UE DTX long preamble length" is set to 4 or 15 slots and the value of the IE "Inactivity Threshold for UE DTX cycle 2" is less than 4 TTIs (for 10ms E-DCH TTI) or 8 TTIs (for 2ms E-DCH TTI); or
- 1> if the IE "UE DRX cycle" is not an integer multiple or a divisor of the value of the IE "UE DTX cycle 1"; or
- 1> if the value of the IE "UE DTX cycle 1" is not an integer multiple or a divisor of the value of the IE "MAC DTX cycle"; or
- 1> if the IE "DTX-DRX timing information" is included in this message and if the CHOICE "timing" is set to "continue"; or
- 1> if the IE "Uplink DPCCH slot format information" is received in an ACTIVE SET UPDATE message and indicates different uplink DPCCH slot format from the one currently configured, and neither the indicated uplink DPCCH slot format nor the currently configured uplink DPCCH slot format are uplink DPCCH slot format 4; or
- 1> if the IE "DTX Information" is not included in this message:
  - 2> the UE behaviour is unspecified.
- NOTE: If the IE "Uplink DPCH info" is included in this message, the UTRAN should ensure that the configuration of the uplink DPCH does not contradict the uplink DPCH configuration indicated in the IE "Uplink DPCCH slot format information".

## 8.6.6.40 HS-SCCH less information (FDD only)

If the IE "HS-SCCH less information" is included and the UE will be in CELL\_DCH state after completion of this procedure, the UE shall:

- 1> if the CHOICE "HS-SCCH less operation" is set to "New HS-SCCH less operation":
  - 2> store the contents of the IE in the variable HS SCCH LESS PARAMS.
- 1> determine the value for the HS\_SCCH\_LESS\_STATUS variable and take the corresponding actions as described in subclause 8.5.35.

## 8.6.6.41 MIMO parameters

If the IE "MIMO parameters" is included, the UE shall:

- 1> act as specified in clauses 8.5.32 and 8.5.33;
- 1> If the IE "MIMO operation" is set to "start":
  - 2> If the MIMO STATUS variable is set to FALSE:
    - 3> the UE behaviour is undefined.
  - 2> otherwise:
    - 3> indicate to lower layers to start operation in MIMO mode, using the parameter values stored in the variable MIMO PARAMS.
- 1> If the IE "MIMO operation" is set to "continue":
  - 2> If the MIMO\_STATUS variable is set to FALSE:
    - 3> the UE behaviour is undefined.
- 1> If the IE "Primary CPICH usage for Channel Estimation" is set to "Primary CPICH shall not be used":
  - 2> the UE behavior is undefined.
- 1> If the IE "Secondary CPICH Info" is included and if the IE "Channelisation code" in MIMO pilot configuration is different from the IE "Channelisation Code" in Secondary CPICH info:
  - 2> the UE behavior is undefined.
- 1> for FDD, if the IE "Secondary CPICH Info" is included and if the IE "Power Offset for S-CPICH for MIMO" is provided, then pass the offset value received in the IE "Power Offset for S-CPICH for MIMO" to the lower layers.

NOTE: This subclause applies to FDD only.

## 8.6.6.42 UL 16QAM settings

If the IE "UL 16QAM settings" is included, the UE shall:

1> indicate to lower layers to operate in 16QAM mode, using the parameters contained in the IE.

## 8.6.6.43 Multi-frequency Info (1.28 Mcps TDD only)

Upon reception of the IE "Multi-frequency info", the UE shall:

- 1> If the IE "Second Frequency info" is included, the UE shall:
  - 2> act as specified in section 8.6.6.1.
- 1> If the IE "FPACH Frequency info" is included::

- 2> store the FPACH frequency indicated in the IE "FPACH Frequency info".
- 1> else:
  - 2> use the primary frequency as FPACH frequency.
- 1> If the IE "UpPCH Position Info" is included:
  - 2> store and use the UpPCH position indicated by the IE "UpPCH Position Info". The calculation of the uplink access position is described in [33].
- 1> else
  - 2> use the UpPTS as the default UpPCH position.

# 8.6.7 Measurement information elements

On reception of measurement information elements the UE shall:

- 1> store the received information in the variable MEASUREMENT\_IDENTITY and CELL\_INFO\_LIST as specified;
- 1> perform further actions as specified in subclause 8.6.7 and subclause 8.4, based on the content of the variable MEASUREMENT IDENTITY.

If a configuration is considered to be invalid the UE may:

1> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

## 8.6.7.1 Measurement validity

If the IE "measurement validity" for a given measurement has not been included in measurement control information, the UE shall delete the measurement associated with the variable MEASUREMENT\_IDENTITY after the UE makes a transition to a new state.

If the IE "measurement validity" for this measurement has been included in measurement control information, the UE shall save the measurement associated with the variable MEASUREMENT\_IDENTITY. The IE "UE state" defines the scope of resuming the measurement.

If the "UE state" is defined as "all states", the UE shall continue the measurement after making a transition to a new state. This scope is assigned for traffic volume measurement type and UE positioning measurement type. For traffic volume measurement type this scope can only be applied by the UE if the IE " traffic volume measurement object" has been included in measurement control information. If the IE " traffic volume measurement object" has not been included in measurement control information, the UE shall not save the measurement control information in variable MEASUREMENT\_IDENTITY, but shall send a MEASUREMENT CONTROL FAILURE message to the UTRAN with failure cause "Configuration incomplete".

If the "UE state" is defined as "all states except CELL\_DCH", the UE shall store the measurement to be resumed after a subsequent transition from CELL\_DCH state to any of the other states in connected mode. This scope is assigned for traffic volume measurement type or UE positioning measurement type.

If the "UE state" is defined as "CELL\_DCH", the UE shall store the measurement to be resumed after a subsequent transition to CELL\_DCH state.

If the IE "measurement type" received in a MEASUREMENT CONTROL message is set to "inter-frequency measurement" or "intra-frequency measurement" and the IE "measurement validity" is present and is set to a value other than "CELL\_DCH", the UE behaviour is unspecified.

## 8.6.7.2 Filter coefficient

If the IE "Filter coefficient" is received the UE shall, depending on the measurement quantity (see Table 8.6.7.2), apply filtering of the measurements for that measurement quantity according to the formula below. This filtering shall be performed by the UE before UE event evaluation. The UE shall depending on the reporting quantity (see Table 8.6.7.2),

also filter the measurements reported in the IE "Measured results". The filtering shall not be performed for the measurements reported in the IE "Measured results on RACH" and for cell-reselection in connected or idle mode.

The filtering shall be performed according to the following formula.

$$F_n = (1 - a) \cdot F_{n-1} + a \cdot M_n$$

The variables in the formula are defined as follows:

 $F_n$  is the updated filtered measurement result

 $F_{n-1}$  is the old filtered measurement result

 $M_n$  is the latest received measurement result from physical layer measurements, the unit used for  $M_n$  is the same unit as the reported unit in the MEASUREMENT REPORT message or the unit used in the event evaluation.

 $a = 1/2^{(k/2)}$ , where k is the parameter received in the IE "Filter coefficient".

NOTE: if **k** is set to 0 that will mean no layer 3 filtering.

In order to initialise the averaging filter,  $F_{\theta}$  is set to  $M_{I}$  when the first measurement result from the physical layer measurement is received.

The physical layer measurement results are sampled once every measurement period. The measurement period and the accuracy for a certain measurement is defined in [19] and [20].

Table 8.6.7.2 lists for all measurement quantities and reporting quantities if L3-filtering is applicable or not and used L3-filtering type for each measurement quantity.

Table 8.6.7.2: L3 filtering applicable for each measurement quantity and reporting quantity

| Measurement- / Reporting quantity | L3-filtering applicable | Linear or logarithmic filtering | Comment   |
|-----------------------------------|-------------------------|---------------------------------|---|
| Pathloss                          | Yes                     | Log                             |   |
| Cell synchronisation information  | No                      | -                               |   |
| Cell Identity                     | No                      | -                               |   |
| Frequency quality estimate        | No                      | -                               | Although the frequency quality estimate itself is not filtered, the inputs to the frequency quality estimate calculation (CPICH Ec/N0 or CPICH RSCP or P-CCPCH RSCP) are filtered |
| UTRA carrier RSSI                 | Yes                     | Log                             |   |
| GSM carrier RSSI                  | Yes                     | Log                             |   |
| UE transmitted power              | Yes                     | Log                             |   |
| FDD                               |                         |                                 |   |
| > UE Rx-Tx time difference        | No                      | -                               |   |
| > CPICH Ec/N0                     | Yes                     | Log                             |   |
| > CPICH RSCP                      | Yes                     | Log                             |   |
| TDD                               |                         |                                 |   |
| > Primary CCPCH RSCP              | Yes                     | Log                             |   |

| > Proposed TGSN              | No  | -   |  |
|------------------------------|-----|-----|--|
| > Timeslot ISCP              | Yes | Log |  |
| > TADV (1.28 Mcps TDD)       | No  | -   |  |
| > Applied TA (3.84 Mcps TDD) | No  | -   |  |
| > Applied TA (7.68 Mcps TDD) | No  | -   |  |

The UE shall support 2 different layer 3 filters per measurement type defined in subclause 8.4.0 (i.e. the UE shall be capable to apply at least 2 different L3 filters to intra-frequency measurement results – see NOTE, at least 2 different L3 filters to inter-frequency measurement results, etc.). If a MEASUREMENT CONTROL message is received that would require the UE to configure more than 2 different layer 3 filters, the UE may:

1> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

NOTE: Any L3 filter applied to a measurement configured with measurement quantity and/or reporting quantity that evaluates or reports measurement results for the current used frequency, is counted as one intrafrequency L3 filter, and is therefore included in the count of used intra-frequency filters.

## 8.6.7.3 Intra-frequency/Inter-frequency/Inter-RAT cell info list

If the IE "Intra-frequency cell info list" is received in System Information Block Type 11, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- 1> if the IE "Intra-frequency cell removal" is received:
  - 2> ignore the IE.
- 1> if the IE "New Intra-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
  - 2> update the variable CELL\_INFO\_LIST as follows:
    - 3> if the IE "Intra-frequency cell id" is received:
      - 4> store received cell information at this position in the Intra-frequency cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
      - 4> mark the position "occupied".
    - 3> if the IE "Intra-frequency cell id" is not received:
      - 4> store the received cell information at the first vacant position in ascending order in the Intra-frequency cell info list in the variable CELL\_INFO\_LIST; and
      - 4> mark the position as "occupied".

If the IE "Intra-frequency cell info list" is received in System Information Block Type 11bis, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- 1> for each cell, and in the same order as the cells appear in the IE:
  - 2> update the variable CELL\_INFO\_LIST as follows:
    - 3> if the IE "Intra-frequency cell id" is received:
      - 4> store received cell information at this position in the Intra-frequency cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
      - 4> mark the position "occupied".

- 3> if the IE "Intra-frequency cell id" is not received:
  - 4> store the received cell information at the first vacant position in ascending order in the Intra-frequency cell info list in the variable CELL\_INFO\_LIST; and
  - 4> mark the position as "occupied".

If the IE "Intra-frequency cell info list" is received in System Information Block Type 12, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- 1> if the IE "Intra-frequency cell removal" is received:
  - 2> if it has the value "Remove some intra-frequency cells", at the position indicated by the IE "Intra-frequency cell id":
    - 3> clear the cell information stored in the variable CELL\_INFO\_LIST; and
    - 3> mark the position "vacant".
  - 2> if it has the value "Remove all intra-frequency cells":
    - 3> for each position referring to an intra-frequency cell in the variable CELL\_INFO\_LIST:
      - 4> clear the cell information stored in the variable CELL\_INFO\_LIST; and
      - 4> mark the position "vacant".
  - 2> if it has the value "Remove no intra-frequency cells":
    - 3> leave the variable CELL\_INFO\_LIST unchanged.
- 1> if the IE "New Intra-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
  - 2> update the variable CELL\_INFO\_LIST as follows:
    - 3> if the IE "Intra-frequency cell id" is received:
      - 4> store received cell information at this position in the Intra-frequency cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
      - 4> mark the position "occupied".
    - 3> if the IE "Intra-frequency cell id" is not received:
      - 4> store the received cell information at the first vacant position in ascending order in the Intra-frequency cell info list in the variable CELL\_INFO\_LIST; and
      - 4> mark the position as "occupied".

If the IE "Intra-frequency cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- 1> if the CHOICE "Intra-frequency cell removal" is received:
  - 2> if it has the value "Remove some intra-frequency cells", at the position indicated by the IE "Intra-frequency cell id":
    - 3> clear the cell information stored in the variable CELL\_INFO\_LIST; and
    - 3> mark the position "vacant".
  - 2> if it has the value "Remove all intra-frequency cells":
    - 3> for each position referring to an intra-frequency cell in the variable CELL\_INFO\_LIST:
      - 4> clear the cell information stored in the variable CELL\_INFO\_LIST; and

- 4> mark the position "vacant".
- 2> if it has the value "Remove no intra-frequency cells":
  - 3> leave the variable CELL\_INFO\_LIST unchanged.
- 1> if the IE "New Intra-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
  - 2> update the variable CELL\_INFO\_LIST as follows:
    - 3> if the IE "Intra-frequency cell id" is received:
      - 4> store received cell information at this position in the Intra-frequency cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
      - 4> mark the position "occupied".
    - 3> if the IE "Intra-frequency cell id" is not received:
      - 4> store the received cell information at the first vacant position in ascending order in the Intra-frequency cell info list in the variable CELL\_INFO\_LIST; and
      - 4> mark the position as "occupied".
- 1> if the IE "Cells for measurement" is received, in the measurement configured by this message only:
  - 2> consider Intra-frequency cells whose cell information is stored at the position indicated by the IE "Intra-frequency cell id" in the variable CELL\_INFO\_LIST.
- 1> if the IE "Cells for measurement" is not received, in the measurement configured by this message:
  - 2> consider all Intra-frequency cells whose cell information is stored in CELL\_INFO\_LIST.

If the IE "Inter-frequency cell info list" is received in System Information Block Type 11 update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- 1> if the IE "Inter-frequency cell removal" is received:
  - 2> ignore the IE.
- 1> if the IE "New Inter-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
  - 2> update the variable CELL\_INFO\_LIST as follows:
    - 3> if the IE "Inter-frequency cell id" is received:
      - 4> store received cell information at this position in the Inter-frequency cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
      - 4> mark the position "occupied".
    - 3> if the IE "Inter-frequency cell id" is not received:
      - 4> store the received cell information at the first vacant position in ascending order in the Inter-frequency cell info list in the variable CELL\_INFO\_LIST; and
      - 4> mark the position as "occupied".

If the IE "Inter-frequency cell info list" is received in System Information Block Type 11bis, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- 1> for each cell, and in the same order as the cells appear in the IE:
  - 2> update the variable CELL\_INFO\_LIST as follows:
    - 3> if the IE "Inter-frequency cell id" is received:

- 4> store received cell information at this position in the Inter-frequency cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
- 4> mark the position "occupied".
- 3> if the IE "Inter-frequency cell id" is not received:
  - 4> store the received cell information at the first vacant position in ascending order in the Inter-frequency cell info list in the variable CELL\_INFO\_LIST; and
  - 4> mark the position as "occupied".

If the IE "Inter-frequency cell info list" is received in System Information Block Type 12, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- 1> if the CHOICE "Inter-frequency cell removal" is received:
  - 2> if it has the value "Remove some inter-frequency cells", at the position indicated by the IE "Inter-frequency cell id":
    - 3> clear the cell information stored in the variable CELL\_INFO\_LIST; and
    - 3> mark the position "vacant".
  - 2> if it has the value "Remove all inter-frequency cells":
    - 3> for each position referring to an inter-frequency cell in the variable CELL\_INFO\_LIST:
      - 4> clear the cell information stored in the variable CELL INFO LIST; and
      - 4> mark the position "vacant".
  - 2> if it has the value "Remove no inter-frequency cells":
    - 3> leave the variable CELL\_INFO\_LIST unchanged.
- 1> if the IE "New Inter-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
  - 2> update the variable CELL\_INFO\_LIST as follows:
    - 3> if the IE "Inter-frequency cell id" is received:
      - 4> store received cell information at this position in the Inter-frequency cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
      - 4> mark the position "occupied".
    - 3> if the IE "Inter-frequency cell id" is not received:
      - 4> store the received cell information at the first vacant position in ascending order in the Inter-frequency cell info list in the variable CELL\_INFO\_LIST; and
      - 4> mark the position as "occupied".

If the IE "Inter-frequency cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order:

- 1> if the CHOICE "Inter-frequency cell removal" is received:
  - 2> if it has the value "Remove some inter-frequency cells", at the position indicated by the IE "Inter-frequency cell id":
    - 3> clear the cell information stored in the variable CELL\_INFO\_LIST; and
    - 3> mark the position "vacant".
  - 2> if it has the value "Remove all inter-frequency cells":

- 3> for each position referring to an inter-frequency cell in the variable CELL\_INFO\_LIST:
  - 4> clear the cell information stored in the variable CELL\_INFO\_LIST; and
  - 4> mark the position "vacant".
- 2> if it has the value "Remove no inter-frequency cells":
  - 3> leave the variable CELL\_INFO\_LIST unchanged.
- 1> if the IE "New Inter-frequency cells" is received, for each cell, and in the same order as the cells appear in the IE:
  - 2> update the variable CELL\_INFO\_LIST as follows:
    - 3> if the IE "Inter-frequency cell id" is received:
      - 4> store received cell information at this position in the Inter-frequency cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
      - 4> mark the position "occupied".
    - 3> if the IE "Inter-frequency cell id" is not received:
      - 4> store the received cell information at the first vacant position in ascending order in the Inter-frequency cell info list in the variable CELL INFO LIST; and
      - 4> mark the position as "occupied".
- 1> if the IE "Cells for measurement" is received, in the measurement configured by this message only:
  - 2> consider Inter-frequency cells whose cell information is stored at the position indicated by the IE "Inter-frequency cell id" in the variable CELL\_INFO\_LIST.
- 1> if the IE "Cells for measurement" is not received, in the measurement configured by this message:
  - 2> consider all Inter-frequency cells whose cell information is stored in CELL\_INFO\_LIST.

If the IE "Inter-RAT cell info list" is received in System Information Block Type 11, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- 1> ignore the IE "Inter-RAT cell removal".
- 1> if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:
  - 2> if the IE "Radio Access Technology" is set to "None":
    - 3> ignore the cell.
  - 2> otherwise:
    - 3> update the variable CELL\_INFO\_LIST as follows:
      - 4> if the IE "Inter-RAT cell id" is received:
        - 5> store received cell information at this position in the Inter-RAT cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
        - 5> mark the position "occupied".
      - 4> if the IE "Inter-RAT cell id" is not received:
        - 5> store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL\_INFO\_LIST; and
        - 5> mark the position as "occupied".
- 1> if the IE "Cells for measurement" is received:

- 2> ignore the IE.
- 1> set the "Inter-RAT cell info indication" to the value "0" and mark the indication status "present" in the variable CELL INFO LIST.

If the IE "Inter-RAT cell info list" is received in System Information Block Type 11bis, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- 1> for each cell, and in the same order as the cells appear in the IE:
  - 2> update the variable CELL\_INFO\_LIST as follows:
    - 3> if the IE "Inter-RAT cell id" is received:
      - 4> store received cell information at this position in the Inter-RAT cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
      - 4> mark the position "occupied".
    - 3> if the IE "Inter-RAT cell id" is not received:
      - 4> store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL\_INFO\_LIST; and
      - 4> mark the position as "occupied".

If the IE "Inter-RAT cell info list" is received in System Information Block Type 12, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- 1> if the IE "Inter-RAT cell removal" is received:
  - 2> if it has the value "Remove some inter-RAT cells", at the position indicated by the IE "Inter-RAT cell id":
    - 3> clear the cell information stored in the variable CELL\_INFO\_LIST; and
    - 3> mark the position "vacant".
  - 2> if it has the value "Remove all inter-RAT cells":
    - 3> for each position referring to an inter-RAT cell in the variable CELL\_INFO\_LIST:
      - 4> clear the cell information stored in the variable CELL\_INFO\_LIST; and
      - 4> mark the position "vacant".
  - 2> if it has the value "Remove no inter-RAT cells":
    - 3> leave the variable CELL\_INFO\_LIST unchanged.
- 1> if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:
  - 2> if the IE "Radio Access Technology" is set to "None":
    - 3> ignore the cell.
  - 2> otherwise:
    - 3> update the variable CELL\_INFO\_LIST as follows:
      - 4> if the IE "Inter-RAT cell id" is received:
        - 5> store received cell information at this position in the Inter-RAT cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
        - 5> mark the position "occupied".
      - 4> if the IE "Inter-RAT cell id" is not received:

- 5> store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL\_INFO\_LIST; and
- 5> mark the position as "occupied".
- 1> if the IE "Cells for measurement" is received:
  - 2> ignore the IE;
- 1> set the "Inter-RAT cell info indication" to the value "0" and mark the indication status "present" in the variable CELL INFO LIST.

If the IE "Inter-RAT cell info list" is received in a MEASUREMENT CONTROL message, the UE shall update the variable CELL\_INFO\_LIST accordingly and in the following order. The UE shall:

- 1> if the IE "Inter-RAT cell removal" is received:
  - 2> if it has the value "Remove some inter-RAT cells", at the position indicated by the IE "Inter-RAT cell id":
    - 3> clear the cell information stored in the variable CELL INFO LIST; and
    - 3> mark the position "vacant".
  - 2> if it has the value "Remove all inter-RAT cells":
    - 3> for each position referring to an inter RAT cell in the variable CELL\_INFO\_LIST:
      - 4> clear the cell information stored in the variable CELL\_INFO\_LIST; and
      - 4> mark the position "vacant".
  - 2> if it has the value "Remove no inter-RAT cells":
    - 3> leave the variable CELL\_INFO\_LIST unchanged.
- 1> if the IE "New Inter-RAT cells" is received, for each cell, and in the same order as the cells appear in the IE:
  - 2> if the IE "Radio Access Technology" is set to "None":
    - 3> ignore the cell.
  - 2> otherwise:
    - 3> update the variable CELL\_INFO\_LIST as follows:
      - 4> if the IE "Inter-RAT cell id" is received:
        - 5> store received cell information at this position in the Inter-RAT cell info list in the variable CELL\_INFO\_LIST, possibly overwriting any existing information in this position; and
        - 5> mark the position "occupied".
      - 4> if the IE "Inter-RAT cell id" is not received:
        - 5> store the received cell information at the first vacant position in ascending order in the Inter-RAT cell info list in the variable CELL\_INFO\_LIST; and
        - 5> mark the position as "occupied".
- 1> if the IE "Cells for measurement" is received, in the measurement configured by this message only:
  - 2> consider Inter-RAT cells whose cell information is stored at the position indicated by the IE "Inter-RAT cell id" in the variable CELL\_INFO\_LIST.
- 1> if the IE "Cells for measurement" is not received, in the measurement configured by this message:
  - 2> consider all Inter-RAT cells whose cell information is stored in CELL\_INFO\_LIST.

- 1> if the IE "Cell selection and re-selection info for SIB11/12" is present:
  - 2> ignore the IE.
- 1> if the IE "Inter-RAT cell info indication" is present:
  - 2> store the received value of the IE "Inter-RAT cell info indication" and mark the indication status "present" in the variable CELL\_INFO\_LIST.
- 1> if the IE "Inter-RAT cell info indication" is not present:
  - 2> clear the "Inter-RAT cell info indication" and mark the indication status "not present" in the variable CELL\_INFO\_LIST.

NOTE: If UTRAN signalling would result in more than "maxCellMeas" cells for the Intra-frequency, Interfrequency or Inter-RAT cell information list the UE behaviour is unspecified.

### 8.6.7.4 Intra-frequency measurement quantity

If the IE "Intra-frequency measurement quantity" is received in a MEASUREMENT CONTROL message, the UE shall:

- 1> if the IE "Measurement quantity" is set to "pathloss"; and
- 1> for any intra-frequency cell indicated by the IE "Cells for measurement", the IE "Primary CPICH Tx power" in FDD or the IE "Primary CCPCH TX Power" in TDD in the intra frequency cell info list in the variable CELL\_INFO\_LIST is not present:
  - 2> set the variable CONFIGURATION INCOMPLETE to TRUE.
- 1> else:
  - 2> configure the measurement quantity accordingly.

# 8.6.7.5 Inter-RAT measurement quantity

If the IE "Inter-RAT measurement quantity" is received in a MEASUREMENT CONTROL message and CHOICE system is GSM, the UE shall:

- 1> if IE "BSIC verification required" is set to "required", for cells that match any of the BCCH ARFCN and BSIC combinations in the list of inter-RAT cells that the UE has received in IE "Inter-RAT cell info list", and that has a "verified" BSIC:
  - 2> report measurement quantities according to IE "inter-RAT reporting quantity" taking into account the restrictions defined in subclause 8.6.7.6;
  - 2> trigger inter-RAT events according to IE "inter-RAT measurement reporting criteria"; and
  - 2> perform event evaluation for event-triggered reporting after BSIC has been verified for a GSM cell as defined in [19]; and
  - 2> trigger periodical reports according to the given "Reporting interval"; and
  - 2> when a periodical measurement report is triggered, include only BSIC verified GSM cells in the IE "Inter-RAT measured results list"; and
    - 3> indicate verified BSIC for a GSM cell in the IE "Inter-RAT measured results list" as defined in subclause 8.6.7.6.
  - 2> when an event triggered measurement report is triggered, include only BSIC verified GSM cells in the IE "Inter-RAT measured results list"; and
    - 3> indicate verified BSIC for a GSM cell in the IE "Inter-RAT measured results list" as defined in subclause 8.6.7.6.

- 1> if IE "BSIC verification required" is set to "not required", for cells that match any of the BCCH ARFCN in the list of inter-RAT cells that the UE has received in IE "Inter-RAT cell info list", regardless if the BSIC is "verified" or "non-verified":
  - 2> report measurement quantities according to IE "inter-RAT reporting quantity";
  - 2> trigger inter-RAT events according to IE "inter-RAT measurement reporting criteria";
  - 2> when an event triggered or periodical measurement report is triggered, include GSM cells in the IE "Inter-RAT measured results list" regardless of whether the BSIC of the GSM cell has been verified or not; and
    - 3> for any GSM cell that has not been verified, indicate non-verified BSIC for a GSM cell in the "Inter-RAT measured results list" IE as defined in subclause 8.6.7.6.
    - 3> for any GSM cell that has been verified, indicate verified BSIC for a GSM cell in the "Inter-RAT measured results list" IE as defined in subclause 8.6.7.6.
- 1> if the IE "Measurement quantity" is set to "pathloss":
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

NOTE: The requirements for a cell to be considered "verified" or "non-verified" can be found in [19].

### 8.6.7.6 Inter-RAT reporting quantity

If the IE "Inter-RAT reporting quantity" is received by the UE, the UE shall:

1> store the content of the IE to the variable MEASUREMENT IDENTITY.

If the IE "Inter-RAT measurement quantity" is received and CHOICE system is GSM, the UE shall check each quantity in the GSM choice. The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Inter-RAT reporting quantity" with the following restrictions:

- 1> if the UE has not confirmed the BSIC of the measured cell:
  - 2> if no compressed mode pattern sequence specified with measurement purpose "Initial BSIC identification" is active and according to its capabilities the UE requires compressed mode to measure this, the UE is not required to include the "inter-RAT cell id" in the IE "Inter-RAT measured results list", when a MEASUREMENT REPORT is triggered.
- 1> if the UE has confirmed the BSIC of the measured cell, then:
  - 2> if no compressed mode pattern sequence specified with measurement purpose "Initial BSIC identification" nor "BSIC re-confirmation" is active and according to its capabilities the UE requires compressed mode to measure this, the UE is not required to include the "inter-RAT cell id" in the IE "Inter-RAT measured results", when a MEASUREMENT REPORT is triggered. If no compressed mode pattern sequence with measurement purpose "GSM carrier RSSI measurements" is active and according to its capabilities the UE requires compressed mode to measure this, the UE may include "inter-RAT cell id" in MEASUMENT REPORT without "GSM carrier RSSI" even if it is defined in the IE "Inter-RAT reporting quantity".
- 1> if the IE "UTRAN estimated quality" is set to TRUE:
  - 2> ignore that IE.
- 1> if IE "GSM Carrier RSSI" is set to TRUE:
  - 2> include optional IE "GSM Carrier RSSI" with a value set to the measured RXLEV to that GSM cell in IE "Inter-RAT measured results list". If no compressed mode pattern sequence specified with measurement purpose "GSM carrier RSSI measurements" is active and according to its capabilities the UE requires compressed mode to measure this, the UE is not required to include the "GSM carrier RSSI" in the IE "Inter-RAT measured results list", when a MEASUREMENT REPORT is triggered.
- 1> if the BSIC of reported GSM cell is "verified":
  - 2> set the CHOICE BSIC to "Verified BSIC" and IE "inter-RAT cell id" to the value that GSM cell had in the IE "Inter-RAT cell info list".

- 1> if the BSIC of reported GSM cell is "non-verified":
  - 2> set the CHOICE BSIC to "Non verified BSIC" and the IE "BCCH ARFCN" to the value of that GSM cells ARFCN.

The requirements for a cell to be considered "verified" or "non-verified" can be found in [19].

## 8.6.7.7 Cell Reporting Quantities

If the IE "Cell Reporting Quantities" is received by the UE, the UE shall store the content of the IE "Cell Reporting Quantities" to the variable MEASUREMENT\_IDENTITY.

The UE shall include measured results in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities", except for the following cases:

If the IE "Cell Identity" is set to TRUE, the UE shall in this version of the specification:

1> treat the IE as if the IE "Cell Identity" is set to FALSE.

If the IE "Cell synchronisation information reporting indicator" is set to TRUE, the UE shall:

- 1> include the IE "Cell synchronisation information" in MEASUREMENT REPORT as specified in the IE "Cell Reporting Quantities":
  - 2> if the measurement is performed on another frequency; or
  - 2> if the IE "Read SFN indicator" included in the IE "Cell info" of the measured cell is set to FALSE:
    - 3> the UE may omit the information group "COUNT-C-SFN frame difference" in the IE "Cell synchronisation information".
  - 2> if the measurement is performed on the same frequency and no RLC Transparent Mode COUNT-C exists in the UE:
    - 3> set the IE "COUNT-C-SFN high" to 0.
  - 2> otherwise:
    - 3> include the information group "COUNT-C-SFN frame difference" with IE "COUNT-C-SFN high" set to:

COUNT-C-SFN high = (((SFN - (COUNT-C mod 4096)) mod 4096) div 256) \* 256;

- 3> if RLC Transparent Mode COUNT-Cs exist in both CN domains:
  - 4> use the COUNT-C of CS domain in this measurement.

If the IE "Proposed TGSN Reporting required" is set to TRUE, the UE shall:

- 1> if compressed mode was used to monitor a TDD cell and the variable TGSN\_REPORTED is set to FALSE:
  - 2> report the IE "Proposed TGSN" indicating the TGSN that suits best to the measured cell;
  - 2> set the variable TGSN\_REPORTED to TRUE.
- 1> otherwise
  - 2> omit the IE "Proposed TGSN".

## 8.6.7.8 Periodical Reporting Criteria

If the IE "Periodical Reporting Criteria" is received by the UE, the UE shall:

1> store the contents of the IE "Amount of Reporting" and IE "Reporting interval" in the variable MEASUREMENT\_IDENTITY.

For the first MEASUREMENT REPORT message, the UE shall:

1> send the MEASUREMENT REPORT as soon as all requested reporting quantities are available according to the requirements and the measurement capabilities set in [19] and [20] for at least one measurement object stored in the variable MEASUREMENT\_IDENTITY, but never later than one reporting interval after measurement initiation.

Following the first MEASUREMENT REPORT message, the UE shall:

1> send a MEASUREMENT REPORT message one reporting interval after the previous MEASUREMENT REPORT message;

The first and subsequent periodic MEASUREMENT REPORT messages shall only include measured results for reporting quantities that are available according to the requirements and the measurement capabilities set in [19] and [20] i.e. if no measured results are available and the measurement type is not UE positioning, the IE "Measured Results" shall not be included in the MEASUREMENT REPORT message. If no measured results are available and the measurement type is UE positioning, the UE shall include the IE "Measured Results" in the MEASUREMENT REPORT message in order to include the IE "UE positioning error" as specified in 8.6.7.19a and 8.6.7.19b.

After the UE has sent a total number of MEASUREMENT REPORT messages, which equal the value indicated in the IE "Amount of reporting", the UE shall:

- 1> terminate measurement reporting; and
- 1> delete all measurement information linked with the "Measurement identity" of the ongoing measurement from the variable MEASUREMENT\_IDENTITY.

If according to subclause 8.6.7.19.1a or 8.6.7.19.1b, a UE configured with a UE positioning measurement is unable to report the requested measurement results due to missing GPS or GANSS assistance data and sends a MEASUREMENT REPORT containing the IE "UE positioning error" and the IE "Error reason" is set to "Assistance Data Missing", then this is not counted in the total number of MEASUREMENT REPORT messages sent.

## 8.6.7.9 Reporting Cell Status

If the IE "Reporting Cell Status" is received, the UE shall set the IE "Measured Results" in MEASUREMENT REPORT as follows. The UE shall:

- 1> for intra-frequency measurement and inter-frequency measurement:
  - 2> include the IE "Cell Measured Results" for cells (excluding cells of another RAT) that satisfy the condition (such as "Report cells within active set") specified in the IE "Reporting Cell Status", in descending order by the measurement quantity.
  - 2> the maximum number of the IE "Cell Measured Results" to be included in the IE "Measured Results" per reported frequency is the number specified in the IE "Reporting Cell Status".
- 1> for periodic inter-frequency measurement:
  - 2> include in the IE "Inter-frequency measured results list" the measured results for all non-used frequencies.
- 1> for inter-RAT measurement:
  - 2> include the measurement results for cells of other RAT (e.g., GSM) that satisfy the condition specified in the IE "Reporting Cell Status", in descending order by the measurement quantity.
  - 2> the maximum number of the IE "Measured GSM Cells" to be included in the IE "Measured Results" is the number specified in the IE "Reporting Cell Status".

If the IE "Reporting Cell Status" is not received for intra-frequency, inter-frequency measurement, or inter-RAT measurement, the UE shall:

- 1> for intra-frequency measurement, inter-frequency measurement and inter-RAT measurement:
  - 2> exclude the IE "Measured Results" in MEASUREMENT REPORT.
- NOTE: The IE "Reporting Cell Status" within "Event Criteria List" defines whether "Cell Measured Results" is present for event-based reporting.

The IE "Reporting Cell Status" is not included in System Information Block 11/12 for periodic intra-frequency measurements. In this case the UE shall assume the default values "Report cells within active set and/or monitored set on used frequency" and "6".

### 8.6.7.10 Traffic Volume Measurement

If the IE "Traffic Volume Measurement" is received by the UE, the UE shall:

1> store the content of the IE to the variable MEASUREMENT\_IDENTITY.

If IE "Traffic volume measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", and if the IE "traffic volume reporting quantity" is included, the UE shall:

- 1> if the parameter "Average of RLC Buffer Payload for each RB" or the parameter "Variance of RLC Buffer payload for each RB" is set to TRUE:
  - 2> if the IE "Traffic volume measurement quantity" is not included:
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
  - 2> if the IE "Traffic volume measurement quantity" is included:
    - 3> if the parameter "time interval to take an average or a variance" is not included:
      - 4> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

If IE "Traffic volume measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", but IE "Traffic volume reporting quantity" or is not received, the UE shall:

1> set the variable CONFIGURATION INCOMPLETE to TRUE.

## 8.6.7.11 Traffic Volume Measurement Reporting Criteria

If the IE "Traffic Volume Measurement Reporting Criteria" is received by the UE, the UE shall:

- 1> if the IE "Parameters sent for each transport channel" is absent:
  - 2> set the variable PROTOCOL\_ERROR\_REJECT to TRUE;
  - 2> set the IE "Protocol error cause" in the variable PROTOCOL\_ERROR\_INFORMATION to "Information element missing".
- 1> for each IE "Parameters sent for each transport channel":
  - 2> if the IE "Parameters required for each Event" is absent:
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

#### 8.6.7.12 FACH measurement occasion info

IE "FACH measurement occasion info" is used to control UE measurement activities in inter-frequency and inter-RAT cells in CELL\_FACH state.

For FDD when variable HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE is set to FALSE, or for TDD: if IE "FACH measurement occasion info" is received, UE shall, when in CELL FACH state:

- 1> if IE "FACH Measurement occasion cycle length coefficient" is included:
  - 2> if, according to its measurement capabilities, UE is not able to perform some of the indicated measurements in this IE simultaneously as receiving the SCCPCH of serving cell:
    - 3> perform those measurements during FACH measurement occasions, see subclause 8.5.11.

- 2> if, according to its measurement capabilities, UE is able to perform some of the indicated measurements in this IE simultaneously as receiving the SCCPCH of serving cell:
  - 3> UE may perform measurements also on other occasions.
- 2> if, according to its measurement capabilities, UE is able to perform the measurements and indicated in this IE simultaneously as receiving the SCCPCH of serving cell:
  - 3> perform the measurements simultaneously as receiving the SCCPCH of serving cell.
- 1> if IE "FACH Measurement occasion cycle length coefficient" is not included:
  - 2> perform those indicated measurements indicated in this IE that UE, according to its measurement capabilities, is able to perform simultaneously as receiving the SCCPCH of serving cell.
- 1> if IE "Inter-frequency FDD measurement indicator" is set to TRUE:
  - 2> perform measurements and evaluate cell re-selection criteria according to [4] on inter-frequency FDD cells listed in "System Information Block type 11", "System Information Block type 11bis", if scheduled on BCH, and "System Information Block type 12", if scheduled on BCH.
- 1> if IE "Inter-frequency FDD measurement indicator" is set to FALSE:
  - 2> neither perform measurements nor evaluate cell re-selection criteria on inter-frequency FDD cells.
- 1> if IE "Inter-frequency TDD measurement indicator" is set to TRUE:
  - 2> perform measurements and evaluate cell re-selection criteria according to [4] on inter-frequency TDD cells listed in "System Information Block type 11", "System Information Block type 11bis", if scheduled on BCH, and "System Information Block type 12", if scheduled on BCH.
- 1> if IE "Inter-frequency TDD measurement indicator" is set to FALSE:
  - 2> neither perform measurements nor evaluate cell re-selection criteria on inter-frequency TDD cells.
- 1> if IE "Inter-RAT measurement indicators" is included:
  - 2> perform measurements and evaluate cell re-selection criteria according to [4] on those cells of listed Inter-RAT types that are present in "System Information Block type 11", "System Information Block type 11bis", if scheduled on BCH, and "System Information Block type 12", if scheduled on BCH.

For FDD when variable HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE is set to TRUE: if IE "FACH measurement occasion info" is received, UE shall:

- 1> if IE "FACH Measurement occasion cycle length coefficient" is included:
  - 2> if, according to its measurement capabilities, the UE is not able to perform some of the indicated measurements in this IE simultaneously as receiving the HS-DSCH and its associated physical channels of serving cell:
    - 3> perform those measurements during FACH measurement occasions, see subclause 8.5.11.
  - 2> if, according to its measurement capabilities, the UE is able to perform some of the indicated measurements in this IE simultaneously as receiving the HS-DSCH and its associated physical channels of serving cell:
    - 3> the UE may perform measurements also on other occasions.
  - 2> if, according to its measurement capabilities, the UE is able to perform the measurements and indicated in this IE simultaneously as receiving the HS-DSCH and its associated physical channels of serving cell:
    - 3> perform the measurements simultaneously as receiving the HS-DSCH and its associated physical channels of serving cell.
- 1> if IE "FACH Measurement occasion cycle length coefficient" is not included:

- 2> perform those indicated measurements indicated in this IE that UE, according to its measurement capabilities, is able to perform simultaneously as receiving the HS-DSCH and its associated physical channels of serving cell.
- 1> if IE "Inter-frequency FDD measurement indicator" is set to TRUE:
  - 2> perform measurements and evaluate cell re-selection criteria according to [4] on inter-frequency FDD cells listed in "System Information Block type 11", "System Information Block type 11bis", if scheduled on BCH, and "System Information Block type 12", if scheduled on BCH.
- 1> if IE "Inter-frequency FDD measurement indicator" is set to FALSE:
  - 2> neither perform measurements nor evaluate cell re-selection criteria on inter-frequency FDD cells.
- 1> if IE "Inter-RAT measurement indicators" is included:
  - 2> perform measurements and evaluate cell re-selection criteria according to [4] on those cells of listed Inter-RAT types that are present in "System Information Block type 11", "System Information Block type 11bis", if scheduled on BCH, and "System Information Block type 12", if scheduled on BCH.

### 8.6.7.13 Measurement Reporting Mode

If IE "Measurement Reporting Mode" is received by the UE, the UE shall:

- 1> store the contents of the IE "Measurement Report Transfer Mode" in the variable MEASUREMENT IDENTITY;
- 1> use the indicated RLC mode when sending MEASUREMENT REPORT message(s) related to this measurement;
- 1> ignore IE "Periodical Reporting / Event Trigger Reporting Mode".
- If IE "Measurement Reporting Mode" is not received by the UE in MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", the UE shall:
  - 1> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT IDENTITY;
  - 1> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

### 8.6.7.14 Inter-frequency measurement

If the Inter-frequency cell info list, included in the variable CELL\_INFO\_LIST, includes a number (M) of frequencies that is larger than the number (N) considered in a UE performance requirement defined in [19] and [20]:

- 1> the UE shall:
  - 2> meet this performance requirement on the first relevant (N) frequencies, according to the order defined by the position of the frequencies in the Inter-frequency cell info list, included in the variable CELL\_INFO\_LIST.
- 1> the UE may:
  - 2> ignore the remaining (M-N) frequencies.
- If IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", but IE "Inter-frequency measurement quantity", IE "Inter-frequency reporting quantity" or IE "parameters required for each event" (given "CHOICE Report criteria" is set to "inter-frequency measurement reporting criteria") is not received, the UE shall:
  - 1> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT\_IDENTITY;
  - 1> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- If IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "modify":

- 1> if CHOICE "Report criteria" in IE "Inter-frequency measurement" is set to "intra-frequency measurement reporting criteria" and IE "parameters required for each event" is present:
  - 2> for FDD, 3.84 Mcps TDD and 7.68 Mcps TDD; or
  - 2> for 1.28 Mcps TDD, if the UE uses only one frequency:
    - 3> the UE behaviour is unspecified.

If IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup" and CHOICE "Report criteria" in IE "Inter-frequency measurement" is set to "intra-frequency measurement reporting criteria":

- 1> for FDD, 3.84 Mcps TDD and 7.68 Mcps TDD; or
- 1> for 1.28 Mcps TDD, if the UE uses only one frequency:
  - 2> the UE behaviour is unspecified.

In the case of an inter-frequency measurement for FDD, the UE shall:

- 1> if IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", if an inter-frequency event is configured that is different from event 2d or 2f, and if the IE "Inter-frequency SET UPDATE" is not received in that same message:
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

NOTE: The UTRAN should include the IE "Inter-frequency SET UPDATE" in the MEASUREMENT CONTROL message with the IE "measurement command" set to "modify" when event 2a, 2b, 2c or 2e is first configured, and when the UE is requested to measure a frequency that has not been previously measured. Otherwise the UE behaviour is unspecified.

If IE "Inter-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message:

- 1> if CHOICE "Report criteria" is set to "inter-frequency measurement reporting criteria" and CHOICE "reporting criteria" in "inter-frequency measurement quantity" is not set to "inter-frequency reporting criteria"; or
- 1> if CHOICE "Report criteria" is set to "intra-frequency measurement reporting criteria" and CHOICE "reporting criteria" in "inter-frequency measurement quantity" is not set to "intra-frequency reporting criteria":
  - 2> for FDD, 3.84 Mcps TDD and 7.68 Mcps TDD; or
  - 2> for 1.28 Mcps TDD, if the UE uses only one frequency:
    - 3> the UE behaviour is not specified.

If the variable CONFIGURATION\_INCOMPLETE is set to TRUE, the UE shall:

1> act as described in subclause 8.4.1.4a.

### 8.6.7.15 Inter-RAT measurement

If the Inter-RAT cell info list, included in the variable CELL\_INFO\_LIST, includes a number (M) of frequencies that is larger than the number (N) considered in a UE performance requirement defined in [19] and [20]:

- 1> the UE shall:
  - 2> meet this performance requirement on the first relevant (N) frequencies, according to the order defined by the position of the frequencies in the Inter-RAT cell info list, included in the variable CELL\_INFO\_LIST.
- 1> the UE may:
  - 2> ignore the remaining (M-N) frequencies.

If IE "Inter-RAT measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", but IE "Inter-RAT measurement quantity", IE "Inter-RAT reporting

quantity" or "parameters required for each event" (given "CHOICE Report criteria" is set to "inter-RAT measurement reporting criteria") is not received, the UE shall:

- 1> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT\_IDENTITY;
- 1> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

### 8.6.7.16 Intra-frequency measurement

If IE "Intra-frequency measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", but IE "Intra-frequency measurement quantity", IE "Intra-frequency reporting quantity", "CHOICE Report criteria" or "parameters required for each event" (given "CHOICE report criteria" is set to "intra-frequency measurement reporting criteria") is not received, the UE shall:

- 1> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT\_IDENTITY;
- 1> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

In case of 1a or 1e event-triggered reporting:

- 1> if the IE "Intra-frequency measurement quantity" is set to "pathloss", the UE shall:
  - 2> if detected set cells are indicated as possibly triggering the event within the IEs "Triggering condition 2":
    - 3> set the variable CONFIGURATION INCOMPLETE to TRUE.

## 8.6.7.17 Quality measurement

If IE "Quality measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", but IE "Quality reporting quantity" is not received, the UE shall:

- 1> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT\_IDENTITY;
- 1> set the variable CONFIGURATION INCOMPLETE to TRUE.

If Transport Channel BLER reporting is requested in IE "Quality Reporting Quantity", but no transport channels are explicitly referenced with transport channel identities, the UE shall

1> report BLER for all downlink transport channels, for which Transport Channel BLER is defined and can be requested [7, 8].

If a transport channel, for which Transport Channel BLER is not defined and can not be requested [7, 8], is referenced with a transport channel identity in IE "Quality Reporting Quantity" and/or IE "Quality Measurement Reporting Criteria":

1> the UE behaviour is not specified.

### 8.6.7.18 UE internal measurement

If IE "UE internal measurement" is received by the UE in a MEASUREMENT CONTROL message, where IE "measurement command" has the value "setup", but IE "UE internal measurement quantity", IE "UE internal reporting quantity" or "parameters sent for each UE internal measurement event" (given "CHOICE report criteria" is set to "UE internal measurement reporting criteria") is not received, the UE shall:

- 1> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT\_IDENTITY;
- 1> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

### 8.6.7.18a Void

## 8.6.7.19 UE positioning

### 8.6.7.19.0 UE positioning reporting criteria

If IE "UE positioning reporting criteria" is included, the UE shall:

- 1> perform the necessary measurements and evaluate the event in the interval indicated in IE "Measurement Interval";
- 1> if IE "Event ID" is set to "7a" and if IE "Report first fix" is set to TRUE:
  - 2> if the IE "Method Type" included in the variable MEASUREMENT\_IDENTITY is set to "UE based":
    - 3> act as specified in subclause 8.6.7.19.1b.

### 8.6.7.19.1 UE positioning reporting quantity

The UE shall:

- 1> ignore IE "Multiple Sets";
- 1> ignore IE "Response Time";
- 1> if IE "Horizontal Accuracy" and/or IE "Vertical Accuracy" is included:
  - 2> should try to achieve the requested level(s) of positioning accuracy with 67% confidence.
- 1> if IE "Positioning Methods" is set to "Cell ID":
  - 2> act as specified in subclause 8.6.7.19.1a.
- 1> if the IE "Method Type" is set to "UE based":
  - 2> if the IE "Positioning Methods" is set to "GPS"; and
  - 2> if the IE "Additional Assistance Data Request" is set to FALSE; and
  - 2> if the IE "UE positioning GPS assistance data" is not received in the MEASUREMENT CONTROL message; and
  - 2> if, according to its UE positioning capabilities, the UE supports a standalone positioning method:
    - 3> use the standalone positioning method.
  - 2> act as specified in subclause 8.6.7.19.1b.
- 1> if the IE "Method Type" is set to "UE assisted":
  - 2> act as specified in subclause 8.6.7.19.1a.
- 1> if the IE "Method Type" is set to "UE-assisted preferred but UE-based allowed" or "UE-based preferred but UE-assisted allowed":
  - 2> act either according to subclause 8.6.7.19.1a or 8.6.7.19.1b depending on the method type chosen by the UE.

If UE according to its capabilities supports Rx-Tx time difference type 2 measurement and if IE "Positioning Methods" is set to "Cell ID" and the IE "Method Type" is set to "UE-based", the UE shall:

1> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

If UE according to its capabilities supports Rx-Tx time difference type 2 measurement and if IE "Positioning Methods" is set to "Cell ID" and the IE "Measurement validity" stored in the variable MEASUREMENT\_IDENTITY is other than "CELL\_DCH", the UE shall:

1> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

The UE shall perform the following consistency check:

- 1> if UE, according to its capabilities, does not support UE-based OTDOA and if IE "Positioning Methods" is set to "OTDOA" and if IE "Method Type" is set to "UE-based":
  - 2> set the variable CONFIGURATION INCOMPLETE to TRUE.
- 1> if UE, according to its capabilities, does not support UE-assisted OTDOA and if IE "Positioning Methods" is set to "OTDOA" and if IE "Method Type" is set to "UE-assisted":
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> if UE, according to its capabilities, does not support UE-based GPS and does not support a standalone positioning method and if IE "Positioning Methods" is set to "GPS" and if the IE "GANSS Positioning Methods" is not present and if IE "Method Type" is set to "UE-based":
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> if UE, according to its capabilities, does not support UE-assisted GPS and if the IE "GANSS Positioning Methods" is not present and if IE "Positioning Methods" is set to "GPS" and if IE "Method Type" is set to "UE-assisted":
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> if UE, according to its capabilities, does not support UE-based positioning and if IE "Positioning Methods" is set to "OTDOAorGPS" and if IE "Method Type" is set to "UE-based":
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> if UE, according to its capabilities, does not support UE-based GANSS and if IE "Positioning Methods" is set to "GPS" and if IE "GANSS Positioning Methods" is present and if IE "Method Type" is set to "UE-based":
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> if UE, according to its capabilities, does not support UE-assisted GANSS and if IE "Positioning Methods" is set to "GPS" and if IE "GANSS Positioning Methods" is present and if IE "Method Type" is set to "UE-assisted":
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> if IE "Positioning Methods" is set to "GPS" and if IE "GANSS Positioning Methods" is present and if UE, according to its capabilities, does not support any GNSS indicated in IE "GANSS Positioning Methods:
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> if UE, according to its capabilities, does not support Rx-Tx time difference type 2 measurement and if IE "Positioning Methods" is set to "Cell ID":
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> if UE, according to its capabilities, does not support UE GPS timing of cell frames measurement and if IE "GPS timing of Cell wanted" is set to TRUE:
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

### 8.6.7.19.1a UE positioning reporting for UE assisted methods

The UE shall:

1> when a measurement report is triggered:

- 2> if the UE was able to perform measurements on at least one neighbour cell included in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED in case of OTDOA or one satellite included in the variable UE\_POSITIONING\_GPS\_DATA in case of GPS positioning or one satellite included in the variable UE\_POSITIONING\_GANSS\_DATA in case of GANSS positioning or one cell from the active set in case of CELL ID:
  - 3> if the IE "Vertical Accuracy" is included:
    - 4> interpret the presence of this IE to indicate that the UTRAN desires to compute a 3-dimensional position estimate.
  - 3> if the IE "Positioning Methods" is set to "GPS"" and if the IE "GANSS Positioning Methods" is not present or if the IE "GANSS Positioning Methods" is present indicating GPS allowed:
    - 4> include the IE "UE positioning GPS measured results" in the measurement report and set the contents of the IE as follows:
      - 5> if the UE supports the capability to provide the GPS timing of the cell frames measurement:
        - 6> if the IE "GPS timing of Cell wanted" is set to TRUE:
          - 7> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.
          - 7> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD; and
          - 7> include the IE "Reference SFN", the IE "UE GPS timing of cell frames" and the IE "UE Positioning GPS Reference Time Uncertainty".
        - 6> if the IE "GPS timing of Cell wanted" is set to FALSE:
          - 7> include the IE "GPS TOW msec" and set it to the GPS TOW when the measurements included in the MEASUREMENT REPORT were valid;
          - 7> include the IE "UE Positioning GPS Reference Time Uncertainty" and set it to the uncertainty of the GPS TOW when the measurements included in the MEASUREMENT REPORT were valid.
      - 5> if the UE does not support the capability to provide the GPS timing of the cell:
        - 6> include the IE "GPS TOW msec" and set it to the GPS TOW when the measurements included in the MEASUREMENT REPORT were valid;
        - 6> include the IE "UE Positioning GPS Reference Time Uncertainty" and set it to the uncertainty of the GPS TOW when the measurements included in the MEASUREMENT REPORT were valid.
  - 3> if the IE "Positioning Methods" is set to "GPS" and the IE "GANSS Positioning Methods" is present indicating other GNSS than GPS allowed and if any of these other GNSSs is measured:
    - 4> include the IE "UE positioning GANSS measured results" in the measurement report and set the contents of the IE as follows:
      - 5> if the UE supports the capability to provide the GANSS timing of the cell frames measurement:
        - 6> if the IE "GANSS timing of Cell wanted" is set to TRUE and if IE "UE GPS timing of cell frames" is not present:
          - 7> perform the UE GANSS timing of cell frames measurement on the serving cell or on one cell of the active set;
          - 7> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD; and
          - 7> include the IE "Reference SFN" and the IE "UE GANSS timing of cell frames".
        - 6> if the IE "GANSS timing of Cell wanted" is set to FALSE and if IE "UE positioning GPS measured results" is not present:

- 7> include the IE "GANSS TOD msec" and set it to the GANSS TOD when the measurements included in the MEASUREMENT REPORT were valid.
- 5> if the UE does not support the capability to provide the GANSS timing of the cell and if IE "UE positioning GPS measured results" is not present:
  - 6> include the IE "GANSS TOD msec" and set it to the GANSS TOD when the measurements included in the MEASUREMENT REPORT were valid.
- 5> if the UE supports the capability to provide the GANSS carrier-phase measurements:
  - 6> if the IE "GANSS Carrier-Phase Measurement Requested" is set to TRUE:
    - 7> include the IE "Carrier Quality Indication" and include the IE "ADR".
- 3> if the IE "Positioning Methods" is set to "OTDOA":
  - 4> include the IE "UE positioning OTDOA measured results" in the measurement report and set the contents of the IE as follows:
    - 5> set IE "SFN" to the SFN when the last measurement was performed;
    - 5> if the UE supports the capability to perform the Rx-Tx time difference type 2 measurement:
      - 6> if the UE is in CELL\_DCH state:
        - 7> if the measured value is equal to "1279.9375":
          - 8> set the IE "Rx-Tx time difference type 2" in IE "UE positioning OTDOA measured results" for the reference cell to "1279.8750".
        - 7> otherwise:
          - 8> set the IE "Rx-Tx time difference type 2" in IE "UE positioning OTDOA measured results" for the reference cell to the measured value.
        - 7> include the IE group "Rx-Tx time difference type 2 info" for the reference cell and for each neighbour cell listed in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED that belongs to the active set.
    - 5> if the UE does not support the capability to perform the Rx-Tx time difference type 2 measurement:
      - 6> set the IE "Rx-Tx time difference type 2" in IE "UE positioning OTDOA measured results" for the reference cell to value "1279.9375" to indicate that the measurement is not supported.
  - 4> include IE group "Neighbour" for all neighbour cells listed in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED on which the SFN-SFN observed time difference type 2 measurement could be performed.
- 3> if IE "Positioning Methods" in the MEASUREMENT CONTROL message has been assigned to value "OTDOA or GPS":
  - 4> the UE may choose to either act as if IE "Positioning Methods" is set to "GPS" or "OTDOA" depending on the method chosen by the UE.
- 3> if the IE "Positioning Methods" is set to "CELL ID":
  - 4> if the UE supports the capability to perform the Rx-Tx time difference type 2 measurement; and
  - 4> if the UE is in CELL DCH state:
    - 5> perform the Rx-Tx time difference type 2 measurement on the cells in the active set; and
    - 5> report the measurement results back to the network in the MEASUREMENT REPORT by using IE "UE positioning OTDOA measured results" including measurements on the cells in the active set; and

- 5> report Rx-Tx time difference type 2 measurement of the reference cell (as designated by the UE); and
- 5> for all reported neighbour cells:
  - 6> report Rx-Tx time difference type 2 measurement; and
  - 6> set the IE "SFN-SFN observed time difference type 2" and all IEs within the corresponding IE "UE positioning OTDOA quality" in IE "UE positioning OTDOA measured results" to value "0".
- 2> if the UE is not able to report the requested measurement results:
  - 3> include IE "UE positioning error" in the MEASUREMENT REPORT and set the contents of this IE as specified in subclause 8.6.7.19.5.
- 1> if the UE is unable to report the requested measurement results due to missing GPS assistance data:
  - 2> the UE may at anytime send a measurement report containing the IE "UE positioning error" and set the contents of this IE as specified in subclause 8.6.7.19.5.
  - 2> after sending the measurement report, the UE shall not send another measurement report to request the same GPS assistance data for at least 20s. This requirement does not apply after release of the current RRC connection.
- 1> if the UE is unable to report the requested measurement results due to missing GANSS assistance data:
  - 2> the UE may at anytime send a measurement report containing the IE "UE positioning error" and set the contents of this IE as specified in subclause 8.6.7.19.5;
  - 2> after sending the measurement report, the UE shall not send another measurement report to request the same GANSS assistance data for at least 20s. This requirement does not apply after release of the current RRC connection.

### 8.6.7.19.1b UE positioning reporting for UE based methods

#### The UE shall:

- 1> when a measurement report is triggered:
  - 2> if the UE has been able to calculate a position after performing measurements on the cells included in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED in case of OTDOA or the UE has been able to calculate a position in case of GPS or GANSS positioning or the UE has been able to calculate a position using a standalone positioning method:
    - 3> include IE "UE positioning Position Estimate Info" in the MEASUREMENT REPORT and set the contents of the IE as follows:
      - 4> if the UE supports the capability to perform the UE GPS timing of cell frames measurement:
        - 5> if the IE "GPS timing of Cell wanted" is set to TRUE:
          - 6> perform the UE GPS timing of cell frames measurement on the serving cell or on one cell of the active set.
          - 6> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD;
          - 6> include the SFN when the position was determined;
          - 6> include the IE "UE GPS timing of cell frames";
          - 6> include the IE "UE Positioning GPS Reference Time Uncertainty".
        - 5> if the IE "GPS timing of Cell wanted" is set to FALSE:
          - 6> include the IE "GPS TOW msec" and set it to the GPS TOW when the position estimate was valid.

- 4> if the position was calculated with GPS; and
- 4> the UE does not support the capability to provide the GPS timing of the cell:
  - 5> include the IE "GPS TOW msec" and set it to the GPS TOW when the position estimate was valid.
- 4> if the UE supports the capability to provide the GANSS timing of the cell frames measurement:
  - 5> if the IE "GANSS timing of Cell wanted" is set to TRUE:
    - 6> perform the UE GANSS timing of cell frames measurement on the serving cell or on one cell of the active set;
    - 6> include the IE "GANSS Time ID" to identify the GNSS system time;
    - 6> include the IE "Primary CPICH Info" for FDD or the IE "cell parameters id" for TDD; and
    - 6> include the IE "Reference SFN" and the IE "UE GANSS timing of cell frames".
  - 5> if the IE "GANSS timing of Cell wanted" is set to FALSE:
    - 6> include the IE "GANSS TOD msec" and set it to the GANSS TOD when the position estimate was valid.
- 4> if the UE does not support the capability to provide the GANSS timing of the cell:
  - 5> include the IE "GANSS TOD msec" and set it to the GANSS TOD when the position estimate was valid;
  - 5> include the IE "GANSS Time ID" to identify the GNSS system time.
- 4> if IE "Vertical Accuracy" has been included in IE "UE positioning reporting quantity":
  - 5> if the IE "Vertical Accuracy" has been assigned to value "0":
    - 6> if the IE "Horizontal Accuracy" has been assigned a value "0":
      - 7> may include IE "Ellipsoid point with altitude".
    - 6> if the IE "Horizontal Accuracy" has been assigned a value unequal to "0"; and
    - 6> if the UE has been able to calculate a 3-dimensional position
      - 7> include IE "Ellipsoid point with altitude" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.
    - 6> if the UE has not been able to calculate a 3-dimensional position:
      - 7> may act as if IE "Vertical Accuracy" was not included in IE "UE positioning reporting quantity".
  - 5> if the IE "Vertical Accuracy" has been assigned to a value unequal to "0":
    - 6> if the UE has been able to calculate a 3-dimensional position:
      - 7> include IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.
    - 6> if the UE has not been able to calculate a 3-dimensional position:
      - 7> act as if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity".
- 4> if IE "Vertical Accuracy" has not been included in IE "UE positioning reporting quantity":
  - 5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to value "0":
    - 6> may include IE "Ellipsoid point".

- 5> if IE "Horizontal Accuracy" in IE "UE positioning reporting quantity" has been assigned to a value unequal to 0:
  - 6> include either IE "Ellipsoid point with uncertainty circle" or IE "Ellipsoid point with uncertainty ellipse" or IE "Ellipsoid point with altitude and uncertainty ellipsoid" as the position estimate.
- 4> if any of the IEs "Ellipsoid point with uncertainty ellipse" or "Ellipsoid point with altitude and uncertainty ellipsoid" is reported:
  - 5> should calculate a value of the IE "Confidence", different from "0", as the probability that the UE is located within the uncertainty region of the one of the IEs "Ellipsoid point with uncertainty ellipse" or "Ellipsoid point with altitude and uncertainty ellipsoid" that is reported.

NOTE: The value "0" of the IE "Confidence" is interpreted as "no information" by the UTRAN [57].

- 4> if IE "Velocity Requested" has been included in IE "UE positioning reporting quantity":
  - 5> include IE "Velocity estimate" if supported and available.
- 2> if the UE was not able to calculate a position:
  - 3> include IE "UE positioning error" in the MEASUREMENT REPORT and set the contents of this IE as specified in subclause 8.6.7.19.5.
- 1> if the UE is unable to calculate a position due to missing GPS assistance data:
  - 2> the UE may at any time send a measurement report containing the IE "UE positioning error" and set the contents of this IE as specified in subclause 8.6.7.19.5;
  - 2> after sending the measurement report, the UE shall not send another measurement report to request the same GPS assistance data for at least 20s. This requirement does not apply after release of the current RRC connection.
- 1> if the UE is unable to report the requested measurement results due to missing GANSS assistance data:
  - 2> the UE may at anytime send a measurement report containing the IE "UE positioning error" and set the contents of this IE as specified in subclause 8.6.7.19.5;
  - 2> after sending the measurement report, the UE shall not send another measurement report to request the same GANSS assistance data for at least 20s. This requirement does not apply after release of the current RRC connection.

### 8.6.7.19.2 UE positioning OTDOA assistance data for UE-assisted

If IE "UE positioning OTDOA reference cell info for UE-assisted" is received in System Information Block type 15.4 or in the MEASUREMENT CONTROL message, the UE shall update the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED accordingly. The UE shall:

1> store received cell information in the UE positioning reference cell info in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED, overwriting any existing information.

If IE "UE positioning OTDOA neighbour cell list for UE-assisted" is received in System Information Block type 15.4 or in the MEASUREMENT CONTROL message, the UE shall update the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED accordingly. The UE shall:

1> store received cell information in the neighbour cell info list in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED, overwriting any existing information.

If, according to its capabilities, UE does not support IPDLs and if IE "IPDL parameters" is received for the reference or any of the neighbour cells, the UE shall:

1> ignore this IE.

In 1.28 Mcps TDD, if the IE "IPDL parameters" is received and the UE supports IPDLs, the UE shall:

- 1> ignore the IE IP\_Slot;
- 1> if the IE "IP PCCPCH" is set to FALSE:
  - 2> configure the physical layer with IP\_Sub to be first subframe according to [33].
- 1> if the IE "IP PCCPCH" is set to TRUE:
  - 2> configure the physical layer with IP\_Sub to be second subframe according to [33].
- 1> if the IE "IP\_PCCPCH" is absent:
  - 2> configure the physical layer with IP\_Sub to use both subframes according to [33].
- If IE "SFN offset validity" is set to FALSE, the UE shall:
  - 1> ignore the IE "SFN offset".

If IE "UE positioning measurement" is received in the MEASUREMENT CONTROL message, the UE shall also perform the following consistency checks:

- 1> if IE "Positioning Methods" is set to "OTDOA":
  - 2> if IE "UE positioning OTDOA reference cell info for UE-assisted" is not included and if UE positioning OTDOA reference cell info for UE-assisted in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED is empty:
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> if IE "Positioning Methods" is set to "OTDOA":
  - 2> if IE "UE positioning OTDOA neighbour cell list for UE-assisted" is not included and if less than two neighbour cells are stored in UE positioning OTDOA neighbour cell info list for UE-assisted in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED:
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

### 8.6.7.19.2a UE positioning OTDOA assistance data for UE-based

The UE shall:

- 1> if IE "UE positioning OTDOA reference cell info for UE-based" is received in System Information Block type 15.5 or in the MEASUREMENT CONTROL message or in the ASSISTANCE DATA DELIVERY:
  - 2> update the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED accordingly;
  - 2> store received cell information in the UE positioning reference cell info for UE-based in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED, overwriting any existing information.
- 1> if IE "UE positioning OTDOA neighbour cell list for UE-based" is received in System Information Block type 15.5 or in the MEASUREMENT CONTROL message or in the ASSISTANCE DATA DELIVERY:
  - 2> update the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED accordingly;
  - 2> store received cell information in the neighbour cell info list for UE-based in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED, overwriting any existing information.
- 1> if, according to its capabilities, UE does not support IPDLs and if IE "IPDL parameters" is received for the reference or any of the neighbour cells:
  - 2> ignore this IE.
- 1> in 1.28 Mcps TDD:
  - 2> if the IE "IPDL parameters" is received and the UE supports IPDLs:
    - 3> ignore the IE IP\_Slot;

- 3> if the IE "IP\_PCCPCH" is set to FALSE:
  - 4> configure the physical layer with IP\_Sub to be first subframe according to [33].
- 3> if the IE "IP PCCPCH" is set to TRUE:
  - 4> configure the physical layer with IP\_Sub to be second subframe according to [33].
- 3> if the IE "IP\_PCCPCH" is absent:
  - 4> configure the physical layer with IP\_Sub to use both subframes according to [33].
- 1> if IE "SFN offset validity" is set to FALSE:
  - 2> ignore the IE "SFN offset".
- 1> if IE "UE positioning measurement" is received in the MEASUREMENT CONTROL message:
  - 2> also perform the following consistency checks:
    - 3> if IE "Positioning Methods" is set to "OTDOA":
      - 4> if IE "UE positioning OTDOA reference cell info for UE-based" is not included and if UE positioning OTDOA reference cell info for UE-based in variable UE POSITIONING OTDOA DATA UE BASED is empty:
        - 5> set the variable CONFIGURATION INCOMPLETE to TRUE.
    - 3> if IE "Positioning Methods" is set to "OTDOA":
      - 4> if IE "UE positioning OTDOA neighbour cell list for UE-based" is not included and if less than two neighbour cells are stored in UE positioning OTDOA neighbour cell info list for UE-based in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED:
        - 5> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
      - 4> if IE "Method Type" is set to "UE based":
        - 5> if IE "UE positioning OTDOA reference cell info for UE-based" is included and if IE "Cell Position" for the reference cell is not included:
          - 6> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
        - 5> if the IE "UE positioning OTDOA neighbour cell list for UE-based" is included and if cell position of less than two neighbour cells of the cells included in this IE and stored in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED are different; or
        - 5> if the IE "UE positioning OTDOA neighbour cell list for UE-based" is included and if cell position of only two neighbour cells of the cells included in this IE and stored in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED are different and if those cell positions are not different to the one of the reference cell stored in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED:
          - 6> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
        - 5> if the IE "Round Trip Time" is neither included for the neighbour cells nor for the reference cell info; and
          - 6> if the IE "UE positioning OTDOA neighbour cell list for UE-based" is included and if cell position of only two neighbour cells of the cells included in this IE and stored in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED are different; or
          - 6> if the IE "UE positioning OTDOA neighbour cell list for UE-based" is included and if cell position of only three neighbour cells of the cells included in this IE and stored in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED are different and if those cell positions are not different to the one of the reference cell stored in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED:

7> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

### 8.6.7.19.3 UE positioning GPS assistance data

The UE may receive GPS assistance data in System Information Block types 15, 15.1, 15.2, or 15.3, or in the ASSISTANCE DATA DELIVERY message, or in the MEASUREMENT CONTROL message.

#### 8.6.7.19.3.1 UE positioning GPS acquisition assistance

If the IE "UE positioning GPS acquisition assistance" is included, the UE shall:

- 1> update the variable UE POSITIONING GPS DATA as follows:
  - 2> delete all information currently stored in the IE "UE positioning GPS acquisition assistance" in the variable UE\_POSITIONING\_GPS\_DATA;
  - 2> store the received acquisition assistance information in the IE "UE positioning GPS acquisition assistance" in the variable UE\_POSITIONING\_GPS\_DATA;
  - 2> store the IE "GPS TOW msec" in the IE "UE positioning GPS acquisition assistance" in variable UE\_POSITIONING\_GPS\_DATA and use it as an estimate of the GPS Time-of-Week at the time of reception of the complete message containing the IE "GPS TOW msec";

NOTE: The UE does not need to apply any compensation on the GPS Time-of-Week.

- 1> if the IEs "SFN" and "UTRAN GPS timing of cell frames" are included:
  - 2> if the UE is able to utilise these IEs:
    - 3> store these IEs in the IE "UE positioning GPS acquisition assistance" in variable UE\_POSITIONING\_GPS\_DATA;
    - 3> if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is not included:
      - 4> if the UE is not in CELL DCH state:
        - 5> use IEs "SFN" and "UTRAN GPS timing of cell frames" to estimate the relationship between GPS time and radio interface timing of the NODE B transmission in the serving cell.
        - 5> if the IE "UE Positioning GPS ReferenceTime Uncertainty" is included:
          - 6> store this IE in the IE "UE Positioning GPS acquisition assistance" in variable UE\_POSITIONING\_GPS\_DATA and use it to determine the relationship between GPS time and air-interface timing of the NODE B transmission.
      - 4> if the UE is in CELL\_DCH state:
        - 5> ignore IEs "SFN" and "UTRAN GPS timing of cell frames".
    - 3> if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is also included:
      - 4> store this IE in the IE "UE positioning acquisition assistance" in variable UE\_POSITIONING\_GPS\_DATA;
      - 4> use IEs "SFN" and "UTRAN GPS timing of cell frames" to estimate the relationship between GPS time and air-interface timing of the NODE B transmission in the cell indicated by "Primary CPICH info" or "cell parameters id".
      - 4> if the IE "UE Positioning GPS ReferenceTime Uncertainty" is included:
        - 5> store this IE in the IE "UE Positioning GPS acquisition assistance" in variable UE\_POSITIONING\_GPS\_DATA and use it to determine the relationship between GPS time and air-interface timing of the NODE B transmission.

### 8.6.7.19.3.2 UE positioning GPS Almanac

If the IE "UE positioning GPS Almanac" is included, the UE shall:

- 1> if the IE "SV Global Health" is included:
  - 1> store this IE in the IE in the IE "SV Global Health" in the IE "UE positioning GPS Almanac" in variable UE\_POSITIONING\_GPS\_DATA.
- 1> for each satellite:
  - 2> store received GPS almanac information at the position indicated by the IE "Sat ID" in the IE "UE positioning GPS Almanac" in the variable UE\_POSITIONING\_GPS\_DATA, possibly overwriting any existing information in this position.
  - 2> interpret IE "Data ID" as the Data ID field contained in the indicated subframe, word 3, most significant 2 bits, as defined by [12];
  - 2> act on the rest of the IEs in a similar manner as specified in [12].

#### 8.6.7.19.3.3 UE positioning D-GPS Corrections

If the IE "UE positioning GPS DGPS corrections" is included, the UE shall:

- 1> update the variable UE\_POSITIONING\_GPS\_DATA as follows:
  - 2> delete all information currently stored in the IE "UE positioning GPS DGPS corrections" in the variable UE\_POSITIONING\_GPS\_DATA;
  - 2> store the received DGPS corrections in the IE "UE positioning GPS DGPS corrections" in the variable UE\_POSITIONING\_GPS\_DATA.
- 1> use IE "GPS TOW sec" to determine when the differential corrections were calculated;
- 1> use IE "Status/Health" to determine the status of the differential corrections.

## 8.6.7.19.3.3a UE positioning GPS Navigation Model

If the IE "UE positioning GPS Navigation Model" is included, for each satellite, the UE shall:

- 1> use IE "Satellite Status" to determine if an update of IE "UE positioning GPS Ephemeris and Clock Correction parameters" has been provided for the satellite indicated by the IE "SatID";
- 1> if an update has been provided for this satellite:
  - 2> act as specified in subclause 8.6.7.19.3.4.

### 8.6.7.19.3.4 UE positioning GPS Ephemeris and Clock Correction Parameters

If the IE "UE positioning GPS Ephemeris and Clock Correction parameters" is included, for each satellite, the UE shall:

- 1> update the variable UE\_POSITIONING\_GPS\_DATA as follows:
  - 2> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GPS Navigation Model" in the variable UE\_POSITIONING\_GPS\_DATA, possibly overwriting any existing information in this position.
- 1> act on these GPS ephemeris and clock correction parameters in a manner similar to that specified in [12].

### 8.6.7.19.3.5 UE positioning GPS ionospheric model

If IE "UE positioning GPS ionospheric model" is included, the UE shall:

- 1> store this IE in the IE "UE positioning GPS ionospheric model" in variable UE\_POSITIONING\_GPS\_DATA;
- 1> act on these GPS ionospheric model parameters in a manner similar to that specified in [12].

### 8.6.7.19.3.6 UE positioning GPS real-time integrity

If this list of bad satellites is included, the UE shall:

- 1> update the variable UE\_POSITIONING\_GPS\_DATA as follows:
  - 2> add the Sat IDs that are not yet included in the list of satellites in the IE "UE positioning GPS real time integrity" in the variable UE\_POSITIONING\_GPS\_DATA;
  - 2> remove all Sat IDs in the list of satellites in the IE "UE positioning GPS real time integrity" in the variable UE\_POSITIONING\_GPS\_DATA that are not included in IE UE positioning GPS real time integrity.
- 1> consider the data associated with the satellites identified in the variable UE\_POSITIONING\_GPS\_DATA as invalid.

## 8.6.7.19.3.7 UE positioning GPS reference time

If the IE "UE positioning GPS reference time" is included, the UE shall:

- 1> store the IE "GPS Week" in "UE positioning GPS reference time" in variable UE\_POSITIONING\_GPS\_DATA and use it as the current GPS week;
- 1> store the IE "GPS TOW msec" in the IE "UE positioning GPS reference time" in variable UE\_POSITIONING\_GPS\_DATA and use it as an estimate of the GPS Time-of-Week at the time of reception of the complete message containing the IE "GPS TOW msec";

NOTE: The UE does not need to apply any compensation on the GPS Time-of-Week.

- 1> if the IE "SFN" and IE "UTRAN GPS timing of cell frames" are included:
  - 2> if the UE is able to utilise the IEs:
    - 3> store these IEs in the IE "UE positioning GPS reference time" in variable UE\_POSITIONING\_GPS\_DATA;
    - 3> if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is not included:
      - 4> if the UE is not in CELL\_DCH state:
        - 5> use IEs "SFN" and "UTRAN GPS timing of cell frames" to estimate the relationship between GPS time and air-interface timing of the NODE B transmission in the serving cell.
        - 5> if the IE "UE Positioning GPS ReferenceTime Uncertainty" is included:
          - 6> store this IE in the IE "UE positioning GPS reference time" in variable UE\_POSITIONING\_GPS\_DATA and use it to determine the relationship between GPS time and air-interface timing of the NODE B transmission.
      - 4> if the UE is in CELL\_DCH state:
        - 5> ignore IEs "SFN" and "UTRAN GPS timing of cell frames".
    - 3> if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is also included:
      - 4> store this IE in the IE "UE positioning GPS reference time" in variable UE\_POSITIONING\_GPS\_DATA;
      - 4> use IEs "SFN" and "UTRAN GPS timing of cell frames" to estimate the relationship between GPS time and air-interface timing of the NODE B transmission in the cell indicated by "Primary CPICH info" or "cell parameters id".
      - 4> if the IE "UE Positioning GPS ReferenceTime Uncertainty" is included:
        - 5> store this IE in the IE "UE positioning GPS reference time" in variable UE\_POSITIONING\_GPS\_DATA and use it to determine the relationship between GPS time and air-interface timing of the NODE B transmission.

- 1> if the IE "UE Positioning GPS ReferenceTime Uncertainty" is not included; and
- 1> if the IE "SFN-TOW Uncertainty" is included:
  - 2> store this IE in the IE "UE positioning GPS reference time" in variable UE\_POSITIONING\_GPS\_DATA and use it to determine if the relationship between GPS time and air-interface timing of the NODE B transmission is known to within at least 10ms.
- 1> if the IE "T<sub>UTRAN-GPS</sub> drift rate" is included:
  - 2> store this IE in the IE "UE positioning GPS reference time" in variable UE\_POSITIONING\_GPS\_DATA; and
  - 2> may use it as an estimate of the drift rate of the NODE B clock relative to GPS time.
- 1> if the IE "GPS TOW Assist" is included:
  - 2> for each satellite:
    - 3> delete all information currently stored in the IE "GPS TOW Assist" in the IE "UE positioning GPS reference time" in the variable UE\_POSITIONING\_GPS\_DATA;
    - 3> store the received GPS TOW Assist information in the IE "UE positioning GPS reference time" in the variable UE\_POSITIONING\_GPS\_DATA.

### 8.6.7.19.3.8 UE positioning GPS reference UE position

If the IE "UE positioning GPS reference UE position" is included, the UE shall:

- 1> store this IE in the IE "UE positioning GPS reference UE position" in variable UE\_POSITIONING\_GPS\_DATA; and
- 1> use it as a priori knowledge of the approximate location of the UE.

### 8.6.7.19.3.9 UE positioning UTC model

If the IE "UE positioning GPS UTC model" is included, the UE shall:

1> store this IE in the IE "UE positioning GPS UTC model" in variable UE\_POSITIONING\_GPS\_DATA.

#### 8.6.7.19.4 UE positioning Ciphering info

The UE shall:

- 1> if deciphering information is received from higher layers for deciphering of GPS assistance data broadcast on system information:
  - 2> store the current key in IE "Current deciphering key" in variable UE POSITIONING GPS DATA;
  - 2> store the next key in IE "Next deciphering key" in variable UE\_POSITIONING\_GPS\_DATA;
  - 2> store the ciphering key flag in UE\_POSITIONING\_GPS\_DATA.
- 1> if deciphering information is received from higher layers for deciphering of GANSS assistance data broadcast on system information:
  - 2> store the current key in IE "Current deciphering key" in variable UE\_POSITIONING\_GANSS\_DATA;
  - 2> store the next key in IE "Next deciphering key" in variable UE\_POSITIONING\_GANSS\_DATA;
  - 2> store the ciphering key flag in UE\_POSITIONING\_GANSS\_DATA.
- 1> if deciphering information is received from higher layers for deciphering of OTDOA assistance data broadcast on system information:

- 2> store the current key in IE "Current deciphering key" in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED;
- 2> store the next key in IE "Next deciphering key" in variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED;
- 2> store the ciphering key flag in UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED.
- 1> if the IE "GPS Data ciphering info" is included in System Information Block type 15:
  - 2> select one of the two deciphering keys received and stored it in UE\_POSITIONING\_GPS\_DATA according to the following:
    - 3> if the value of the received IE "Ciphering Key Flag" is the same as the value of the IE "Ciphering Key Flag" stored in the variable UE\_POSITIONING\_GPS\_DATA:
      - 4> select the current deciphering key.
    - 3> if the value of the received IE "Ciphering Key Flag" is different from the value of the IE "Ciphering Key Flag" stored in the variable UE\_POSITIONING\_GPS\_DATA:
      - 4> select the next deciphering key.
  - 2> store the received IE in the variable UE\_POSITIONING\_GPS\_DATA;
  - 2> use the selected deciphering key to decipher the broadcast UE positioning GPS information contained within the System Information Block types 15.1, 15.2 and 15.3.
- 1> if the IE "GANSS Data ciphering info" is included in System Information Block type 15.8:
  - 2> select one of the two deciphering keys received and stored it in UE\_POSITIONING\_GANSS\_DATA according to the following:
    - 3> if the value of the received IE "Ciphering Key Flag" is the same as the value of the IE "Ciphering Key Flag" stored in the variable UE\_POSITIONING\_GANSS\_DATA:
      - 4> select the current deciphering key.
    - 3> if the value of the received IE "Ciphering Key Flag" is different from the value of the IE "Ciphering Key Flag" stored in the variable UE\_POSITIONING\_GANSS\_DATA:
      - 4> select the next deciphering key.
  - 2> store the received IE in the variable UE\_POSITIONING\_GANSS\_DATA;
  - 2> use the selected deciphering key to decipher the broadcast UE positioning GANSS information contained within the System Information Block types 15.1bis, 15.2bis, 15.3bis, 15.6 and 15.7.
- 1> if the IE "OTDOA positioning ciphering info" is included in System Information Block type 15.4:
  - 2> select one of the two deciphering keys and stored it in UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED according to the following:
    - 3> if the value of the received IE "Ciphering Key Flag" is the same as the value of the IE "Ciphering Key Flag" stored in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED:
      - 4> select the current deciphering key.
    - 3> if the value of the received IE "Ciphering Key Flag" is different from the value of the IE "Ciphering Key Flag" stored in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED:
      - 4> select the next deciphering key.
  - 2> store the received IE in the variable UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED;
  - 2> use the selected deciphering key to decipher the IE "OTDOA assistance data" included in the System Information Block types 15.4.

### 8.6.7.19.5 UE positioning Error

The UE shall set the contents of the IE "UE positioning Error" as follows:

- 1> if the IE "Positioning Methods" in IE "UE positioning reporting quantity" has been assigned to value "OTDOA" and no neighbour cells could be received,
  - 2> set IE "Error reason" to "Not Enough OTDOA Cells";
- 1> if the IE "Positioning Methods" in IE "UE positioning reporting quantity" has been assigned to value "GPS":
  - 2> if there were not enough GPS satellites to be received:
    - 3> set IE "Error reason" to "Not Enough GPS Satellites".
  - 2> if some GPS assistance data was missing:
    - 3> set IE "Error reason" to "Assistance Data Missing"; and
    - 3> if the IE "Additional Assistance Data Request" included in the IE "UE positioning reporting quantity" stored in the variable MEASUREMENT\_IDENTITY is set to TRUE:
      - 4> include the IE "GPS Additional Assistance Data Request".
    - 3> if the IE "Additional Assistance Data Request" included in the IE "UE positioning reporting quantity" stored in the variable MEASUREMENT\_IDENTITY is set to FALSE:
      - 4> not include the IE "GPS Additional Assistance Data Request", and use the assistance data available for doing a positioning estimate.
  - 2> if the UE was not able to read the SFN of the reference cell included in the IE "UE positioning GPS reference time" or in the IE "UE positioning acquisition assistance":
    - 3> set IE "Error reason" to "Reference Cell Not Serving Cell".
  - 2> if the UE was not able to measure the requested GPS timing of cell frames measurement:
    - 3> set IE "Error reason" to "Not Accomplished GPS Timing Of Cell Frames".
- 1> if the IE "Positioning Methods" in IE "UE positioning reporting quantity" has been assigned to value "GPS" and the IE "GANSS Positioning Methods" is present:
  - 2> if there were not enough GANSS satellites to be received:
    - 3> set IE "Error reason" to "Not Enough GANSS Satellites".
  - 2> if some GANSS assistance data was missing:
    - 3> set IE "Error reason" to "Assistance Data Missing"; and
    - 3> if the IE "Additional Assistance Data Request" included in the IE "UE positioning reporting quantity" stored in the variable MEASUREMENT\_IDENTITY is set to TRUE:
      - 4> include the IE "GANSS Additional Assistance Data Request".
    - 3> if the IE "Additional Assistance Data Request" included in the IE "UE positioning reporting quantity" stored in the variable MEASUREMENT\_IDENTITY is set to FALSE:
      - 4> not include the IE "GANSS Additional Assistance Data Request", and use the assistance data available for doing a positioning estimate.
  - 2> if the UE was not able to read the SFN of the reference cell included in the IE "UE positioning GANSS reference time":
    - 3> set IE "Error reason" to "Reference Cell Not Serving Cell".
  - 2> if the UE was not able to measure the requested GANSS timing of cell frames measurement:

- 3> set IE "Error reason" to "Not Accomplished GANSS Timing Of Cell Frames".
- 1> if none of the conditions above are fulfilled:
  - 2> set IE "Error reason" to "Undefined Error".

The UE shall not set the IE "Error reason" to "Request Denied By User" or "Not Processed and Timeout".

#### 8.6.7.19.6 Void

### 8.6.7.19.7 UE positioning GANSS assistance data

The UE may receive GANSS assistance data in System Information Block types 15bis, 15.1bis, 15.2bis, 15.3bis, 15.6, 15.7 or 15.8 or in the ASSISTANCE DATA DELIVERY message, or in the MEASUREMENT CONTROL message. IE "UE positioning GANSS assistance data" is divided into a common part which is applicable to any GNSS and a generic part which contains assistance data separately for each supported GNSS.

#### 8.6.7.19.7.1 UE positioning GANSS reference measurement information

If the IE "UE positioning GANSS reference measurement information" is included, the UE shall:

- 1> update the variable UE\_POSITIONING\_GANSS\_DATA as follows:
  - 2> for each GANSS the IE "UE positioning GANSS reference measurement information" is included:
    - 3> delete all information currently stored in the IE "UE positioning GANSS reference measurement information" in the variable UE\_POSITIONING\_GANSS\_DATA;
    - 3> store the received information in the IE "UE positioning GANSS reference measurement information" in the variable UE\_POSITIONING\_GANSS\_DATA.
- 1> perform the following consistency check:
  - 2> if the IE "UE positioning GANSS reference time" is included and the IE "UE positioning GPS acquisition assistance" is not included, the UE shall interpret the IE "Satellite information" to be valid at the time provided in IE "UE positioning GANSS reference time";
  - 2> if the IE "UE positioning GPS acquisition assistance" is included, the UE shall interpret the IE "Satellite information" to be valid at the time provided in the IE "UE positioning GPS acquisition assistance";
  - 2> if neither the IE "UE positioning GANSS reference time" nor the IE "UE positioning GPS acquisition assistance" is included:
    - 3> set the variable CONFIGURATION\_INCOMPLETE to TRUE.

#### 8.6.7.19.7.2 UE positioning GANSS Almanac

If the IE "UE positioning GANSS Almanac" is included, the UE shall:

- 1> for each GANSS:
  - 2> for each satellite:
    - 3> store received GANSS almanac information at the position indicated by the IE "SV ID" in the IE "UE positioning GANSS Almanac" in the variable UE\_POSITIONING\_GANSS\_DATA, possibly overwriting any existing information in this position;
    - 3> act on the information in a similar manner as specified in e.g. [59].

### 8.6.7.19.7.3 UE positioning D-GANSS Corrections

If the IE "UE positioning DGANSS corrections" is included, the UE shall:

1> for each GANSS:

- 2> update the variable UE\_POSITIONING\_GANSS\_DATA as follows:
  - 3> delete all information currently stored in the IE "UE positioning DGANSS corrections" in the variable UE\_POSITIONING\_GANSS\_DATA;
  - 3> store the received DGANSS corrections in the IE "UE positioning DGANSS corrections" in the variable UE POSITIONING GANSS DATA.
- 2> use IE "DGANSS Reference Time" to determine when the differential corrections were calculated;
- 2> use IE "Status/Health" to determine the status of the differential corrections.

#### 8.6.7.19.7.4 UE positioning GANSS Navigation Model

If the IE "UE positioning GANSS Navigation Model" is included, the UE shall:

for each GANSS:

- 2> if Orbit Model is "Keplerian Parameters":
  - 3> store the three MSB parameters and use them in combination with LSB parameters provided in IEs "UE positioning GANSS clock model" and "UE positioning GANSS orbit model" to get the complete parameters.
- 2> for each satellite, the UE shall:
  - 3> for IE "UE positioning GANSS clock model":
    - 4> act as specified in subclause 8.6.7.19.6.4a.
  - 3> for IE "UE positioning GANSS orbit model":
    - 4> act as specified in subclause 8.6.7.19.6.4b.

## 8.6.7.19.7.4a UE positioning GANSS Clock Model

If the IE "UE positioning GANSS clock model" is included, the UE shall:

- 1> for each GANSS:
  - 2> update the variable UE\_POSITIONING\_GANSS\_DATA as follows:
    - 3> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GANSS Navigation Model" in the variable UE\_POSITIONING\_GANSS\_DATA, possibly overwriting any existing information in this position.
  - 2> act on these GANSS clock models in a manner similar to that specified in a relevant ICD.

### 8.6.7.19.7.4b UE positioning GANSS Orbit Model

If the IE "UE positioning GANSS orbit model" is included, for each satellite of each supported GNSS, the UE shall:

- 1> update the variable UE\_POSITIONING\_GANSS\_DATA as follows:
  - 2> store this IE at the position indicated by the IE "Sat ID" in the IE "UE positioning GANSS Navigation Model" in the variable UE\_POSITIONING\_GANSS\_DATA, possibly overwriting any existing information in this position..
- 1> act on these GANSS orbit models in a manner similar to that specified in a relevant ICD.

### 8.6.7.19.7.5 UE positioning GANSS ionospheric model

If IE "UE positioning GANSS ionospheric model" is included, the UE shall:

1> store this IE in the IE "UE positioning GANSS ionospheric model" in variable UE\_POSITIONING\_GANSS\_DATA;

1> act on these GANSS ionospheric model parameters in a manner similar to that specified in [61].

### 8.6.7.19.7.6 UE positioning GANSS real-time integrity

If this list of bad satellites is included, the UE shall for each GANSS:

- 1> update the variable UE\_POSITIONING\_GANSS\_DATA as follows:
  - 2> for each satellite included in the list:
    - 3> add the Sat IDs that are not yet included in the list of satellites in the IE "UE positioning GANSS real time integrity" in the variable UE\_POSITIONING\_GANSS\_DATA;
    - 3> if the IE "Bad GNSS Signal ID" is included in the satellite information:
      - 4> store this IE at the position indicated by the IE "Bad GNSS SatID" in the variable UE\_POSITIONING\_GANSS\_DATA, possibly overwriting any existing information in this position.
    - 3> remove all Sat IDs in the list of satellites in the IE "UE positioning GANSS real time integrity" in the variable UE\_POSITIONING\_GANSS\_DATA that are not included in IE UE positioning GANSS real time integrity.
- 1> consider the data associated with the satellites or signals identified in the variable UE\_POSITIONING\_GANSS\_DATA as invalid.

### 8.6.7.19.7.7 UE positioning GANSS reference time

If the IE "UE positioning GANSS reference time" is included, the UE shall:

- 1> if the IE "GANSS Day" is included:
  - 2> store this IE in "UE positioning GANSS reference time" in variable UE\_POSITIONING\_GANSS\_DATA and use it as the current GANSS day.
- 1> store the IE "GANSS TOD" in the IE "UE positioning GANSS reference time" in variable UE\_POSITIONING\_GANSS\_DATA and use it as an estimate of the GANSS Time-of-Day at the time of reception of the complete message containing the IE "GANSS TOD";

NOTE: The UE does not need to apply any compensation on the GANSS Time-of-Day.

- 1> if the IE "GANSS TOD Uncertainty" is included:
  - 2> store this IE in the IE "UE positioning GANSS reference time" in variable UE\_POSITIONING\_GANSS\_DATA and use it to determine the uncertainty of the relationship between GANSS time and air-interface timing of the NODE B transmission.
- 1> if the IE "GANSS Time ID" is not included:
  - 2> use Galileo system time as a reference for GANSS-Time-of-Day.
- 1> if the IE "GANSS Time ID" is included:
  - 2> use the system time indicated by this IE as a reference for GANSS-Time-of-Day.
- 1> if the IE "SFN" and IE "UTRAN GANSS timing of cell frames" are included:
  - 2> if the UE is able to utilise the IEs:
    - 3> store these IEs in the IE "UE positioning GANSS reference time" in variable UE POSITIONING GANSS DATA;
    - 3> if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is not included:
      - 4> if the UE is not in CELL\_DCH state:

- 5> use IEs "SFN" and "UTRAN GANSS timing of cell frames" to estimate the relationship between GANSS time and air-interface timing of the NODE B transmission in the serving cell.
- 4> if the UE is in CELL\_DCH state:
  - 5> ignore IEs "SFN" and "UTRAN GANSS timing of cell frames".
- 3> if the IE "Primary CPICH Info" for FDD or IE "cell parameters id" for TDD is also included:
  - 4> store this IE in the IE "UE positioning GANSS reference time" in variable UE\_POSITIONING\_GANSS\_DATA;
  - 4> use IEs "SFN" and "UTRAN GANSS timing of cell frames" to estimate the relationship between GANSS time and air-interface timing of the NODE B transmission in the cell indicated by "Primary CPICH info" or "cell parameters id".
- 1> if the IE "T<sub>UTRAN-GANSS</sub> drift rate" is included:
  - 2> store this IE in the IE "UE positioning GANSS reference time" in variable UE\_POSITIONING\_GANSS\_DATA; and
  - 2> may use it as an estimate of the drift rate of the NODE B clock relative to GANSS time.

### 8.6.7.19.7.8 UE positioning GANSS reference UE position

If the IE "UE positioning GANSS reference UE position" is included, the UE shall:

- 1> store this IE in the IE "UE positioning GANSS reference UE position" in variable UE\_POSITIONING\_GANSS\_DATA; and
- 1> use it as a priori knowledge of the approximate location of the UE.

### 8.6.7.19.7.9 UE positioning GANSS time model

If the IE "UE positioning GANSS time model" is included, the UE shall for each GANSS:

- 1> store the information in "UE positioning GANSS time model" in variable UE\_POSITIONING\_GANSS\_DATA;
- 1> use the stored parameters to relate GANSS time to time reference indicated by IE "GNSS\_TO\_ID".

### 8.6.7.19.7.10 UE positioning GANSS UTC model

If the IE "UE positioning GANSS UTC model" is included, the UE shall for each GANSS:

1> store this IE in the IE "UE positioning GANSS UTC model" in variable UE POSITIONING GANSS DATA.

#### 8.6.7.19.7.11 UE positioning GANSS data bit assistance

If the IE "UE positioning GANSS data bit assistance" is included, the UE shall for each GANSS:

- 1> store this IE in the IE "UE positioning GANSS data bit assistance" in variable UE\_POSITIONING\_GANSS\_DATA;
- 1> use the data in IE "Data Bits" for data wipe-off of satellite signal indicated by IEs "SV\_ID" and "GNSS Data Type ID".

#### 8.6.7.20 Void

### 8.6.7.21 Intra-frequency reporting quantity for RACH reporting

If the IE "Intra-frequency reporting quantity for RACH reporting" is included, the UE shall:

1> if the IE "SFN-SFN observed time difference reporting indicator" has the value "type 2":

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- 2> act as if the value of the IE "SFN-SFN observed time difference reporting indicator" is "no reporting".
- 1> if the IE "Reporting quantity" (FDD) or all IEs "Reporting quantity" (TDD) have the value "no report":
  - 2> the UE behaviour is unspecified.

### 8.6.7.22 Additional Measurement List

If the IE "Additional Measurement List" is received in a MEASUREMENT CONTROL message, the UE shall:

- 1> if the received measurement configuration in this MEASUREMENT CONTROL message, or any measurement referenced in the "Additional Measurement List" do not all have the same validity (for this consistency check the UE shall assume "CELL\_DCH" as the measurement validity for measurements of type "inter-RAT", "UE internal", and "quality"):
  - 2> set the variable CONFIGURATION\_INCOMPLETE to TRUE.
- 1> if any of the measurements referenced in the "Additional Measurement List" is an intra-frequency, interfrequency or inter-RAT measurement, and this measurement is configured with event based reporting:
  - 2> the UE behaviour is not specified.
- 1> if any of the "intra-frequency", "inter-frequency", "traffic volume" or "UE positioning" measurements referenced in the "Additional Measurement List" has been setup without including the IE "measurement validity":
  - 2> the UE behaviour is not specified.
- 1> if the result of this MEASUREMENT CONTROL message is such that more than one additional measurement of the same type will be referenced in the IE "Additional Measurement List" in the MEASUREMENT\_IDENTITY variable:
  - 2> the UE behaviour is not specified.
- 1> if the UE has no IE "Additional Measurement List" stored the in variable MEASUREMENT\_IDENTITY associated with the identity indicated by the IE "measurement identity":
  - 2> store the received IE "Additional Measurement List" in the variable MEASUREMENT\_IDENTITY.

If the IE "Additional Measurement List" is received in a MEASUREMENT CONTROL message with the IE "Measurement command" value set to "modify", and the UE has an IE "Additional Measurement List" stored in the variable MEASUREMENT\_IDENTITY associated with the identity indicated by the IE "measurement identity", the UE shall:

1> replace the information stored in "Additional Measurement List" in variable MEASUREMENT\_IDENTITY associated to the identity indicated by the IE "measurement identity" with the one received in the MEASUREMENT CONTROL message.

If the IE "Additional Measurement List" is not received in a MEASUREMENT CONTROL message and the IE "Measurement command" has the value "modify" and the UE has an IE "Additional Measurement List" stored in the variable MEASUREMENT\_IDENTITY associated with the identity indicated by the IE "measurement identity", the UE shall:

1> leave the IE "Additional Measurement List" stored in the variable MEASUREMENT\_IDENTITY associated with the identity indicated by the IE "measurement identity" unchanged.

If, at any time during the life-time of a measurement, any measurement referenced in the Additional Measurement List does not exist, the UE shall:

1> remove this measurement identity from the Additional Measurement List.

NOTE: A measurement referenced in the Additional Measurement List which is updated with a measurement command set to "modify", or replaced with a measurement command set to "setup", continues to exist.

If the measurement configured with the MEASUREMENT CONTROL message triggers a measurement report, the UE shall:

1> also include the reporting quantities for the measurements referenced by the additional measurement identities. The contents of the IE "Additional Measured results" are completely determined by the measurement configuration of the referenced additional measurement.

### 8.6.8 Void

# 8.6.9 MBMS specific information elements

The UE shall perform the generic actions defined in this subclause only for the information elements corresponding with services that are included in variable MBMS\_ACTIVATED\_SERVICES.

## 8.6.9.1 Continue MCCH Reading

If the "Continue MCCH Reading" is included the UE shall:

- 1> if the IE "Continue MCCH reading" is set to 'TRUE':
  - 2> continue receiving the MBMS MODIFIED SERVICES INFORMATION from MCCH in the next modification period and act upon it as specified in subclause 8.7.3.4.

### 8.6.9.1a MBMS dynamic persistence level

If the IE "MBMS dynamic persistence level" is included the UE shall:

1> Apply the dynamic persistence level in place of that broadcast in SIB 7 for MBMS related PRACH transmissions that are made within the modification period in which this IE was received.

### 8.6.9.2 MBMS PL Service Restriction Information

The UE shall:

- 1> if the UE receives a Radio Bearer Control message or a CELL UPDATE CONFIRM message:
  - 2> if the IE "MBMS PL Service Restriction Information" is included:
    - 3> set the variable MBMS\_PL\_SERVICE\_RESTRICTION\_INFO\_DEDICATED to TRUE.
  - 2> else:
    - 3> set the variable MBMS\_PL\_SERVICE\_RESTRICTION\_INFO\_DEDICATED to FALSE.
- 1> if the UE receives a Radio Bearer Control message or a CELL UPDATE CONFIRM message or an MBMS GENERAL INFORMATION message:
  - 2> perform the MBMS frequency selection procedure as specified in subclause 8.5.27.

### 8.6.9.3 MBMS L1 combining schedule

If the IE "MBMS L1 combining schedule" is included the UE may:

1> apply L1 combining between the concerned neighbouring cell' S-CCPCH and the corresponding current cell's S-CCPCH for the periods indicated by this IE.

## 8.6.9.3a MBMS Number of neighbour cells

The UE may:

1> apply the number of neighbour cells to identify if all MBMS NEIGHBOURING CELL P-T-M RB INFORMATION messages have been received from MCCH.

### 8.6.9.4 MBMS Preferred frequency information

If the IE "MBMS Preferred frequency information" is included the UE shall:

- 1> if HCS is not used, and the IE "Qoffmbms" is not present for the MBMS preferred frequency:
  - 2> consider the cells on the MBMS preferred frequency having a Qoffmbms equal to "infinity".
- 1> if HCS is used, and the IE "HCS\_OFFmbms" is not present for the MBMS preferred frequency:
  - 2> consider the cells on the MBMS preferred frequency having the highest HCS priority level.
- 1> perform the MBMS frequency selection procedure as specified in subclause 8.5.27.

#### 8.6.9.4a Void

# 8.6.9.4b MBMS p-t-m activation time

Upon reception of the IE "MBMS p-t-m activation time", for the services included in the IE "Modified service list" in the MBMS MODIFIED SERVICES INFORMATION message, and, if the IE "MBMS all unmodified p-t-m services" is included in the MBMS MODIFIED SERVICES INFORMATION message, for the services included in the IE "Unmodified services list" included in the MBMS UNMODIFIED SERVICES INFORMATION message, the UE shall:

- 1> if the IE "MBMS required UE action" for this service is set to "Acquire PTM RB info":
  - 2> for the current cell:
    - 3> stop using any old configuration on TTIs that are after or contain the time instant as indicated by the IE "MBMS p-t-m activation time";
    - 3> start using the configuration for the S-CCPCH received for that p-t-m bearer in the same modification period as the IE "MBMS p-t-m activation time" on TTIs that are after or that contain the time instant as indicated by the IE "MBMS p-t-m activation time".
  - 2> for neighbouring cells:
    - 3> for the neighbouring cells for which the IE "MBMS transmission time difference" is included:
      - 4> stop using any old configuration on TTIs corresponding to the TTIs of the cell wherein the UE is reading the MCCH from and where the new p-t-m radio bearer information is valid according to the above;
      - 4>> start using the configuration for the S-CCPCH received for that p-t-m bearer in the same modification period as the IE "MBMS p-t-m activation time" on TTIs corresponding to the TTIs of the cell wherein the UE is reading the MCCH from and where the new p-t-m radio bearer information is valid according to the above.
    - 3> for the neighbouring cells for which the IE "MBMS transmission time difference" is not included:
      - 4> stop using any old configuration on TTIs that are after or contain the time instant as indicated by the IE "MBMS p-t-m activation time".
      - 4> start using the configuration for the S-CCPCH received for that p-t-m bearer in the same modification period as the IE "MBMS p-t-m activation time" on TTIs that are after the time instant as indicated by the IE "MBMS p-t-m activation time".

### 8.6.9.5 MBMS RB list released to change transfer mode

If the IE "MBMS RB list released to change transfer mode" is included the UE shall:

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1> perform the service prioritisation procedure as specified in subclause 8.5.26, taking into account that the MBMS service(s) for which the radio bearers are released will be provided via p-t-m radio bearer(s).

## 8.6.9.6 MBMS Required UE action

If the IE "MBMS required UE action" is included and concerns an MBMS activated service the UE shall:

- 1> if the "MBMS required UE action" is set to 'None':
  - 2> take no action with respect to this IE.
- 1> if the IE "MBMS required UE action" is set to 'Acquire counting info' or set to 'Acquire counting info- PTM RBs unmodified':
  - 2> perform the MBMS counting procedure as specified in subclause 8.7.4;
- NOTE: If upper layers indicate that an MBMS transmission has already been received correctly, the UE will continue as if the information about the concerned MBMS transmission was not included in the message. This implies that the UE does not respond to counting for a transmission already received correctly.
- 1> if the IE "MBMS required UE action" is set to 'Acquire PTM RB info'; or
- 1> if the IE "MBMS required UE action" is set to 'Acquire counting info- PTM RBs unmodified' and the UE is not receiving a p-t-m RB for the concerned service:
  - 2> continue acquiring the MBMS COMMON P-T-M RB INFORMATION, MBMS CURRENT CELL P-T-M RB INFORMATION and the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION messages without delaying reading of MCCH until the next modification period and without stopping at the end of the modification period, in accordance with subclause 8.7.1.3
  - 2> act upon the MBMS COMMON P-T-M RB INFORMATION, MBMS CURRENT CELL P-T-M RB INFORMATION and the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION message, if received, in accordance with subclause 8.7.5;
- 1> if the IE "MBMS required UE action" is set to 'Request PTP RB':
  - 2> if the UE is in idle mode:
    - 3> indicate to upper layers that establishment of a PS signalling connection is required to receive the concerned MBMS [5], unless the UE has already requested p-t-p RB establishment in the current modification period, and use the establishment cause set to 'MBMS ptp RB request' in the RRC connection establishment procedure.
  - 2> if the UE is in URA\_PCH, Cell\_PCH or CELL\_FACH states:
    - 3> indicate to upper layers to initiate a service request procedure [5] to receive the concerned MBMS service;
    - 3> perform the cell update procedure with cause "MBMS ptp RB request", as specified in subclause 8.3.1.2, unless the UE has already requested p-t-p RB establishment in the current modification period.
  - 2> if the UE is in CELL DCH:
    - 3> indicate to upper layers to initiate a service request procedure [5] to receive the concerned MBMS service.
- 1> if the IE "MBMS required UE action" is set to 'Release PTM RB':
  - 2> stop receiving the concerned MBMS service;
  - 2> for 1.28 Mcps TDD, if the IE "MBMS PTM RB Release Cause" is present to indicate the actual MBMS PTM RB release cause to UE:
    - 3> pass the value of the IE "MBMS PTM RB Release Cause" to upper layers.

- 2> if the UE is in a state other than CELL\_DCH (for FDD) or if the UE is in Idle mode, URA\_PCH or CELL PCH state (for TDD); and
- 2> if the UE decides not to receive an MBMS service indicated on the MCCH; and
- 2> if the variable MBMS\_PREV\_FREQUENCY\_INFO is not empty:
  - 3> if any frequency in SIB11 or SIB12 has the same frequency stored in the variable MBMS\_PREV\_FREQUENCY\_INFO:
    - 4> select a suitable UTRA cell in that frequency.
    - 4> if no suitable UTRA cell in that frequency is found:
      - 5> select a suitable UTRA cell in another frequency.
  - 3> if no frequency in SIB11 or SIB12 has the same frequency stored in the variable MBMS\_PREV\_FREQUENCY\_INFO.
    - 4> select a frequency randomly among the inter-frequencies indicated in SIB11 or SIB12.
      - 5> select a suitable UTRA cell in the selected frequency
      - 5> if no suitable UTRA cell in the selected frequency is found:
        - 6> select a suitable UTRA cell in another frequency.
  - 3> clear the variable MBMS\_PREV\_FREQUENCY\_INFO.
- 2> clear all service specific information applicable for the concerned service.

NOTE: The UE is only required to acquire the relevant SIB11 or SIB12, according to what is specified in subclauses 8.1.1.6.11 and 8.1.1.6.12.

### 8.6.9.6a MBMS re- acquire MCCH

If the UE receives the IE " MBMS re- acquire MCCH", the UE shall:

1> perform the MCCH acquisition procedure as specified in subclause 8.7.2.

### 8.6.9.7 MBMS Service transmissions info list

If the UE receives the IE "MBMS Service transmissions info list", the UE may:

1> discontinue reception of the S-CCPCH on which the IE was received, except for the service transmissions indicated by this IE for the concerned scheduling period.

### 8.6.9.8 MBMS Short transmission ID

If the IE "MBMS short transmission ID" is included the UE shall:

- 1> if the value of the "MBMS short transmission ID" is less than or equal to the number of services identified by the IE "Modified services list" included in the MBMS MODIFIED SERVICES INFORMATION message acquired in the same modification period as the one in which the "MBMS short transmission ID" is received:
  - 2> consider the "MBMS short transmission ID" to be an index to the list of services contained in the IE "Modified services list" and apply the MBMS transmission identity specified for this entry.

### 1> otherwise:

2> compile a list of available MBMS services, as included in the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages acquired in the same modification period as the one in which the "MBMS short transmission ID" is received:

- 3> concatenate the services contained in IE "Modified services list" included in the MBMS MODIFIED SERVICES INFORMATION and the services contained in IE "Unmodified services list" included in the MBMS UNMODIFIED SERVICES INFORMATION.
- 2> consider the 'MBMS short transmission ID' to be the index of the entry in the list of available services and apply the MBMS transmission identity specified for this entry.

### 8.6.9.9 MBMS Transmission identity

If the IE "MBMS transmission identity" is included the UE shall:

- 1> if upper layers indicate that the MBMS transmission has already been received correctly:
  - 2> ignore the information about this MBMS transmission i.e. continue as if the information about the concerned MBMS transmission was not included in the message.

#### 1> otherwise:

2> act upon the information about the concerned MBMS transmission as specified elsewhere.

The UE behaviour is unspecified if an MBMS transmission identity appears more than once in the combined list of transmissions i.e. the IE is included more than once in the MBMS MODIFIED SERVICES INFORMATION or in the MBMS UNMODIFIED SERVICES INFORMATION, or once in both message.

### 8.6.9.9a MBMS transmission time difference

The IE "MBMS transmission time difference" indicates the time difference between the transmissions on the current and the neighbour cell i.e. indicating the TTIs that can be L1- combined. The UE shall:

1> derive the parameter Neighbor\_Start from the IE MBMS transmission time difference as follows:

MBMS transmission time difference = (Neighbor\_Start / Max\_TTI\_Size) mod 4

where Neighbor\_Start is the CFN of the first radio frame in a TTI on the neighbour cell that may be combined with the TTI on the current cell of which the CFN of the first radio frame equals 0 while Max\_TTI\_Size is the largest TTI size on the S-CCPCHs to be soft combined;

1> in case of partial soft combining, derive the CFN of the first radio frame in a TTI on the neighbour cell that may be combined assuming the same time difference applies.

The maximum delay between S-CCPCH clusters that the UE may combine is set by UE performance requirements.

NOTE: The MBMS transmission time difference is semi-static; it does not vary within or between L1 combining periods nor when full combining is used.

### 8.6.9.9ab MBSFN cluster frequency

If the cell is operating in MBSFN mode according to subclause 8.1.1.6.3 the UE shall:

- 1> if for two or more services included in variable MBMS\_ACTIVATED\_SERVICES the IE "MBSFN cluster frequency" is available:
  - 2> request from upper layers the priorities of the different MBMS services included in variable MBMS\_ACTIVATED\_SERVICES for which the IE "MBSFN cluster frequency" is available;
  - 2> if the IE "MBSFN cluster frequency" is available for the service with the highest priority included in variable MBMS\_ACTIVATED\_SERVICES:
    - 3> tune to the frequency indicated in the IE "MBSFN cluster frequency" of that service.

### 8.6.9.9ac MBSFN frequency list

For FDD and 3.84/7.68 Mcps TDD this IE may be included in system information block 11 in a cell which is not providing MBMS service in MBSFN mode in order to provide information about frequencies providing MBMS service

in MBSFN mode. For 1.28 Mcps TDD this IE shall be included in system information block 11 in a cell which is not providing MBMS service in MBSFN only mode but is associated with one or more cells in MBSFN only mode, in order to provide information about frequencies providing MBMS service in MBSFN only mode, and this IE also provides information about the secondary frequencies providing MBMS service in non-MBSFN only mode of current multi-frequency cell.

If the IE "MBSFN frequency list" is included in system information block 11 a UE may consider that all frequencies on which cells providing MBMS service in MBSFN mode are listed in the IE "MBSFN frequency list".

If the IE "MBSFN frequency list" is included in system information block 11 and no frequency is included in the IE "MBSFN frequency list" a UE may consider that no cell operating in MBSFN mode is available.

For FDD and 3.84/7.68 Mcps TDD if the IE "MBSFN frequency list" is not included in system information block 11 and if services are listed in the variable MBMS\_ACTIVATED\_SERVICES a UE supporting reception of MBMS service in MBSFN mode shall search for cells providing MBMS service in MBSFN mode.

For 1.28 Mcps TDD the IE "Cell parameter ID" in the IE "MBSFN frequency list" included in system information block 11 indicates the cell which is providing MBMS service in MBSFN only mode on the corresponding frequency; if the IE "Cell parameter ID" is not included in the IE "MBSFN frequency list", a UE may consider that the corresponding frequency is the secondary frequency providing MBMS service in non-MBSFN only mode of current multi-frequency cell.

## 8.6.9.9ad MBSFN inter frequency neighbour list

For FDD and 3.84/7.68 Mcps TDD if the IE "MBSFN inter frequency neighbour list" is included and the UE does not receive a service from this MBSFN cluster, the UE shall:

- 1> consider that MBMS services transmitted in MBSFN mode are available on these frequencies;
- 1> if "MBSFN services notified" is indicated for a frequency listed in the IE "MBSFN inter frequency neighbour list":
  - 2> consider that available services provided on this frequency are notified on the current frequency.
- 1> if at least one frequency is listed for which "MBSFN services not notified" is indicated in the IE "MBSFN inter frequency neighbour list":
  - 2> if the IE "All MBSFN services notified" is included for one frequency as defined in [21] for FDD and [22] for TDD on which the UE supports reception in MBSFN mode:
    - 3> attempt to receive notifications on one of the frequencies for which the IE "All MBSFN services notified" is included according to subclause 8.7.3.

#### 2> else:

- 3> attempt to receive notifications on all frequencies for which the IE "MBSFN services not notified" is indicated as specified in subclause 8.7.3 on that band.
- NOTE 1: The UE may not be able to receive frequencies listed in the IE "MBSFN inter frequency neighbour list" on a different band compared to the band on which the information is sent (this depends on UE capabilities).
- NOTE 2: The indications for different frequencies (i.e. "MBSFN services notified", "MBSFN services not notified", "All MBSFN services notified") in the MBMS GENERAL INFORMATION message can be different depending on the frequency in which the MBMS GENERAL INFORMATION message has been received.

### 8.6.9.9ae MBSFN TDM Information

If the IE "MBSFN TDM Information List" is included, the UE shall:

1> assume that the MBMS service identitied in IE "MBMS short transmission ID" can be received only in frame(s) with the CFN fulfilling the following equation:

```
(CFN div N) mod TDM_Rep = TDM_Offset + i, i = 0 to TDM_Length - 1
```

where

- N is the TTI (in number of 10ms frames) of the FACH
- TDM\_Rep is the repetition period
- TDM Offset is the offset
- TDM\_Length is the number of TTIs the MBMS Service is transmitted, starting from TDM \_Offset
- CFN is set according to subclause 8.5.15.3 (Initialisation for Cell\_FACH).

#### 8.6.9.9b MCCH configuration information

If the IE "MCCH configuration information" is included the UE shall:

1> Consider an access information period to start from the frame with the SFN value fulfilling the following equation (where *m* is the modification period coefficient and *a* is the access info period coefficient):

$$SFN \bmod 2^{(m-a)} = 0$$

1> Consider a repetition period to start from the frame with the SFN value fulfilling the following equation (where *m* is the modification period coefficient and *r* is the repetition period coefficient):

$$SFN \bmod 2^{(m-r)} = 0$$

1> Consider a modification period to start from the frame with the SFN value fulfilling the following equation (where *m* is the modification period coefficient):

SFN mod 
$$2^m = 0$$

- 1> configure the RLC entity in the UE used for receiving MCCH in accordance with 8.6.4.9;
- 1> configure the MAC entity in the UE, used for receiving MCCH, for receiving TCTF field unless the IE 'TCTF presence' is received;

#### 8.6.9.10 Next scheduling period

If the IE "Next scheduling period" is included for an MBMS service the UE may:

1> discontinue reception of the given MBMS service for the number of scheduling periods indicated by this IE.

#### 8.6.9.11 TDD MBSFN Information

For TDD if the UE receives "TDD MBSFN Information" (via System Information Block type 5) then the UE shall assume that any CCTrCH configured to use the timeslots indicated by this IE shall use MBSFN Burst Type.

## 8.7 MBMS specific procedures

## 8.7.1 Reception of MBMS control information

#### 8.7.1.1 General

The procedure for receiving MBMS control information is used by a UE to receive information from UTRAN concerning the way it provides MBMS services the UE has activated. The procedure applies to all UEs supporting MBMS, irrespective of its state (idle, URA\_PCH, CELL\_PCH, CELL\_FACH and CELL\_DCH).

Most MBMS control information is provided on the MCCH. The information on MCCH is transmitted using a fixed schedule, which is common for all services. MCCH information other than MBMS ACCESS INFORMATION message is transmitted periodically based on a repetition period. This MCCH information is repeated a configurable number of times with exactly the same content; the period in which the content of MCCH information other than MBMS ACCESS INFORMATION message remains unchanged is called the modification period. MBMS ACCESS INFORMATION

message may be transmitted more frequently, based on the Access Info period. The transmissions of MBMS ACCESS INFORMATION message within a modification period need not have exactly the same content (the value of some parameters eg. IE 'Access probability factor – Idle' may change). Nevertheless, the transmissions of MBMS ACCESS INFORMATION message within a modification period should concern the same MBMS service(s), although information for a service may be removed eg. upon completion of the counting for that service.

The general principles are illustrated in figure 8.7.1-1, in which different colours indicate potentially different content of the MCCH information.

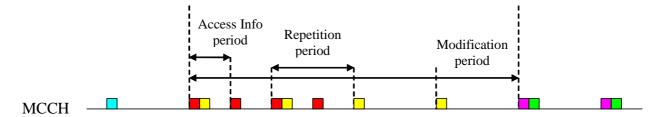


Figure 8.7.1-1: Scheduling of MCCH Information

For services provided via a p-t-m radio bearer scheduling information may be provided on an MSCH mapped on the same S-CCPCH as the p-t-m radio bearer(s). For some of the services provided p-t-m this scheduling information may be provided by signalling an MBMS SCHEDULING INFORMATION message at every scheduling period, while for others the MBMS SCHEDULING INFORMATION message may be signalled less frequently i.e. after a multiple of the scheduling period. In general, the UE is neither required to acquire MSCH information nor to act on it.

In case the UE shall acquire MCCH information that is scheduled at the same time as MSCH information, the reception of the MCCH information shall take precedence.

In order to minimise the time the UE needs to read MCCH upon notification as specified in 8.7.3 to acquire the required information, UTRAN should schedule the MCCH messages in a specific order ie. any message that needs to be read by any UE due to the reception of the MBMS MODIFIED SERVICES INFORMATION message should be scheduled prior to the remaining messages. More specifically, the UE may assume that UTRAN schedules the MCCH messages in the following order:

#### MBMS MODIFIED SERVICES INFORMATION,

followed by messages that needs to be read by any UE due to the content of the MBMS MODIFIED SERVICES INFORMATION message in the following order: MBMS GENERAL INFORMATION, MBMS COMMON P-T-M RB INFORMATION, MBMS CURRENT CELL P-T-M RB INFORMATION, one or more MBMS NEIGHBOURING CELL P-T-M RB INFORMATION,

#### MBMS UNMODIFIED SERVICES INFORMATION,

followed by messages that do not need to be read by any UE due to the content of the MBMS MODIFIED SERVICES INFORMATION message in the following order: MBMS GENERAL INFORMATION, MBMS COMMON P-T-M RB INFORMATION, MBMS CURRENT CELL P-T-M RB INFORMATION, one or more MBMS NEIGHBOURING CELL P-T-M RB INFORMATION

#### 8.7.1.2 Initiation

The requirements concerning which MBMS control information the UE shall acquire in the different cases is specified in other subclauses. This section specifies common requirements concerning the reception of MCCH information and MSCH information.

#### 8.7.1.3 UE requirements on reading of MCCH information

When requested to acquire MBMS control information other than the MBMS ACCESS INFORMATION message, the UE shall:

- 1> if requested to start reading MCCH at the next modification period:
  - 2> start reading MCCH at the beginning of the next modification period.

- 1> otherwise
  - 2> start reading MCCH at the beginning of the next repetition period.
- 1> if requested to stop reading MCCH at the end of the modification period:
  - 2> continue reading MCCH until the required MBMS control information is received or until the UE detects a TTI in which no MCCH information is transmitted, whichever is first;
  - 2> continue reading MCCH in this manner at every subsequent repetition period, until the information is received correctly or until the end of the modification period.

#### 1> otherwise:

- 2> continue reading MCCH until the required MBMS control information is received or until the UE detects a TTI in which no MCCH information is transmitted, whichever is first;
- 2> continue reading MCCH in this manner at every subsequent repetition period, until the information is received correctly.
- NOTE 1: The UE may combine information received at different repetition periods within a modification period.

When requested to acquire the MBMS ACCESS INFORMATION message, the UE shall:

- 1> if requested to start reading MCCH at the next modification period:
  - 2> start reading MCCH at the beginning of the next modification period.
- 1> otherwise:
  - 2> start reading MCCH at the beginning of the next access info period.
- 1> continue reading MCCH in this manner at every subsequent access info period, until the message is received correctly or until the end of the modification period.

If the UE is CELL\_DCH and has a compressed mode pattern that overlaps with the period in which it needs to read MCCH, the UE may temporarily refrain from receiving MCCH unless it is capable of simultaneous operation. If the UE is CELL\_FACH and has a measurement occasion that overlaps with the period in which it needs to read MCCH, the UE may temporarily refrain from receiving MCCH unless it is capable of simultaneous operation. A UE in CELL\_FACH may omit performing measurements during a measurement occasion in order to receive MCCH provided that this does not prevent it from fulfilling the measurement performance requirements as specified in [19]. In Idle mode as well as in CELL\_PCH and URA\_PCH states the UE may temporarily refrain from receiving MCCH if needed to fulfil the measurements performance requirements as specified in [19].

NOTE 2: The UTRAN should endeavour to ensure that for each UE in CELL\_FACH the assigned measurement occasions do not overlap constantly with the periodic MCCH transmissions.

If the UE selects to another cell, the UE shall re-establish the RLC entity used for MCCH reception.

#### 8.7.1.4 UE requirements on reading of MSCH information

If the UE supports reception of MSCH, UE shall:

- 1> if the UE needs to acquire MCCH information that is transmitted at the same time as the MSCH information and the UE does not support simultaneous reception:
  - 2> refrain from reading MSCH.

If the UE supports reception of MSCH, UE should:

- 1> start reading MSCH at the beginning of the next scheduling period;
- 1> continue reading MSCH until the required MBMS control information is received or until the UE detects a TTI in which no MSCH information is transmitted, whichever is first.

#### 8.7.2 MCCH acquisition

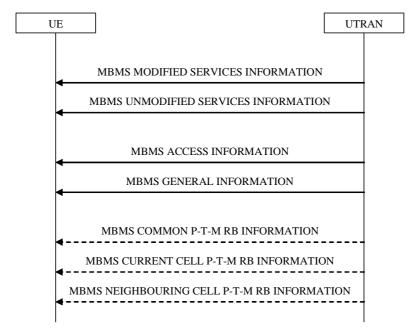


Figure 8.7.2-1: MCCH acquisition, normal

#### 8.7.2.1 General

The UE applies the MCCH acquisition procedure to determine the MBMS services available in the cell and to initiate reception of the services that the UE has activated. The procedure applies to all UEs supporting MBMS, irrespective of their state (idle, URA\_PCH, CELL\_PCH, CELL\_FACH and CELL\_DCH). The UE may also apply the MCCH acquisition procedure to inform NAS of other available services that are not activated.

For 1.28 Mcps TDD, if the cell is operating in MBSFN mode, the MCCH will be deployed on the MBSFN Special Timeslot [30].

#### 8.7.2.2 Initiation

If the variable MBMS\_ACTIVATED\_SERVICES is not empty, the UE shall apply the MCCH acquisition procedure upon selecting (eg. upon power on) or re-selecting a cell supporting MBMS or an MBSFN cluster, upon change of MBMS controlling cell (eg. due to an active set update or hard handover), upon entering UTRA from another RAT, upon release of a MBMS PTP RB for the purpose of changing transfer mode, upon return from loss of coverage and upon receiving an indication from upper layers that the set of activated services has changed.

#### 8.7.2.3 MCCH information to be acquired by the UE

The UE shall detect the available MBMS services by acquiring the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages without delaying reading of MCCH until the next modification period and without stopping at the end of the modification period, in accordance with subclause 8.7.1.3.

For cells not operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE shall immediately acquire the MBMS ACCESS INFORMATION and the MBMS GENERAL INFORMATION messages ie. it shall not delay reception of these messages until it has completed the acquisition of the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages. Likewise for cells not operating in MBSFN mode as indicated in subclause 8.1.1.6.3, the UE should immediately acquire the MBMS CURRENT CELL P-T-M RB INFORMATION and MBMS NEIGHBOURING CELL P-T-M RB INFORMATION messages.

For cells operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE shall immediately acquire the MBMS GENERAL INFORMATION messages ie. it shall not delay reception of these messages until it has completed the acquisition of the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES

INFORMATION messages. Likewise for cells operating in MBSFN mode as indicated in subclause 8.1.1.6.3, the UE should immediately acquire the MBMS CURRENT CELL P-T-M RB INFORMATION.

The UE shall continue acquiring the above messages until it has received a consistent set of MCCH information eg. both the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION message should be acquired in the same modification period.

## 8.7.2.4 Reception of the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION by the UE

If the UE is receiving an MBMS service that is not included in variable MBMS\_ACTIVATED\_SERVICES and that is using a p-t-m radio bearer, the UE shall:

- 1> stop receiving the concerned MBMS service and clear all service specific information applicable for the concerned service.
- 1> if the UE is in a state other than CELL\_DCH (for FDD) or if the UE is in Idle mode, URA\_PCH or CELL\_PCH state (for TDD); and
- 1> if the UE does not decide to receive an MBMS service; and
- 1> if the variable MBMS\_PREV\_FREQUENCY\_INFO is not empty:
  - 2> if any frequency in SIB11 or SIB12 has the same frequency stored in the variable MBMS\_PREV\_FREQUENCY\_INFO:
    - 3> select a suitable UTRA cell in that frequency;
    - 3> if no suitable UTRA cell in that frequency is found:
      - 4> select a suitable UTRA cell in another frequency.
  - 2> if no frequency in SIB11 or SIB12 has the same frequency stored in the variable MBMS\_PREV\_FREQUENCY\_INFO:
    - 3> select a frequency randomly among the inter-frequencies indicated in SIB11 or SIB12:
      - 4> select a suitable UTRA cell in the selected frequency;
      - 4> if no suitable UTRA cell in the selected frequency is found:
        - 5> select a suitable UTRA cell in another frequency.
  - 2> clear the variable MBMS\_PREV\_FREQUENCY\_INFO.

NOTE: The UE is only required to acquire the relevant SIB11 or SIB12, according to what is specified in subclauses 8.1.1.6.11 and 8.1.1.6.12.

Upon completing the reception of the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages, the UE shall

- 1> act as follows for each of the services included in these messages provided that the service is included in variable MBMS\_ACTIVATED\_SERVICES and upper layers indicate that the session has not yet been received correctly (referred to as 'applicable services');
- 1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following;
- 1> if one or more preferred frequency applies for the applicable services:
  - 2> delay acting upon the "MBMS Preferred frequency information" until receiving the relevant MCCH information i.e. the MBMS GENERAL INFORMATION message;
  - 2> act upon the "MBMS Preferred frequency information" as specified in subclause 8.6.9.4 for the service(s) that upper layers indicate to have highest priority.

- 1> perform the MBMS frequency selection procedure as specified in subclause 8.5.27;
- 1> if the UE receives an MBMS service using a p-t-m radio bearer and the received messages do not contain an IE "MBMS required UE action" set to "Acquire PTM RB info" or set to "Acquire counting info- PTM RBs unmodified" for that service then the UE shall:
  - 2> stop receiving the concerned MBMS service and clear all service specific information applicable for the concerned service.

#### 8.7.2.5 Reception of the other MBMS messages by the UE

For cells not operating in MBSFN mode as indicated in subclause 8.1.1.6.3, upon receiving the MBMS ACCESS INFORMATION message, the UE shall act as specified in subclause 8.7.4.3.

Upon receiving the MBMS GENERAL INFORMATION message, the UE should store all relevant IEs included in this message. The UE shall also:

1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following.

For cells not operating in MBSFN mode as indicated in subclause 8.1.1.6.3, upon receiving the MBMS CURRENT CELL P-T-M RB INFORMATION and MBMS NEIGHBOURING CELL P-T-M RB INFORMATION messages, the UE shall act as specified in subclauses 8.7.5.3 and subclause 8.7.5.4 respectively.

For cells operating in MBSFN mode as indicated in subclause 8.1.1.6.3 upon receiving the MBMS CURRENT CELL P-T-M RB INFORMATION message, the UE shall act as specified in subclauses 8.7.5.3.

The procedure ends.

#### 8.7.3 MBMS Notification

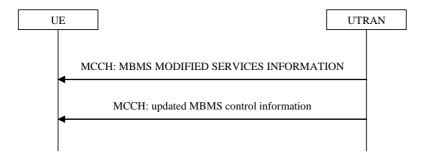


Figure 8.7.3-1: MBMS notification on MCCH

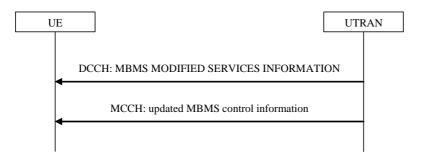


Figure 8.7.3-2: MBMS notification on DCCH

#### 8.7.3.1 General

The MBMS notification procedure is used by the UE to respond to a notification provided by UTRAN, indicating a change applicable for one or more MBMS services the UE has activated. The procedure applies to all UEs supporting

MBMS, irrespective of their state (idle and connected mode: URA\_PCH, CELL\_PCH, CELL\_FACH and CELL\_DCH). The actual notification mechanism to be used depends on the UE state.

Reception of the MBMS MODIFIED SERVICES INFORMATION message on DCCH is optional for a UE capable of reading MCCH in CELL DCH.

#### 8.7.3.2 Initiation

UTRAN initiates the notification procedure to inform UEs about a change applicable for one or more MBMS services available in a cell. Some types of MBMS service changes e.g. the establishment of a p-t-m radio bearer, involve a modification of MCCH messages other than the MBMS MODIFIED SERVICES INFORMATION message.

- NOTE 1: On MCCH, the MBMS MODIFIED SERVICES INFORMATION as well as the MBMS UNMODIFIED SERVICES INFORMATION messages are signalled even if no services are contained in the message.
- NOTE 2: A service remains in the MBMS MODIFIED SERVICES INFORMATION message until it enters a 'steady state', upon which it moves to the MBMS UNMODIFIED SERVICES INFORMATION message. In case counting is used, the service remains in the MBMS MODIFIED SERVICES INFORMATION message through the moment UTRAN has decided the transfer mode.

#### 8.7.3.3 Receiving the MBMS Notification information

#### 8.7.3.3.1 Reception via MCCH

The UE may:

- 1> monitor the MBMS notification Indicator Channel (MICH);
- 1> if a notification on the MICH for one or more of the MBMS services included in the variable MBMS\_ACTIVATED\_SERVICES is detected:
  - 2> acquire the MBMS MODIFIED SERVICES INFORMATION message with delaying the reading of MCCH until the next modification period and with stopping at the end of the modification period, in accordance with subclause 8.7.1.3;
  - 2> handle the MBMS MODIFIED SERVICES INFORMATION message as specified in subclause 8.7.3.4.

The UE shall:

- 1> if in idle mode, URA\_PCH, CELL\_PCH or CELL\_FACH state:
  - 2> if not monitoring MICH during the current or the previous modification period:
    - 3> acquire the MBMS MODIFIED SERVICES INFORMATION message from MCCH at the start of every modification period, in accordance with subclause 8.7.1.3;
    - 3> handle the MBMS MODIFIED SERVICES INFORMATION message as specified in subclause 8.7.3.4.
- 1> if in CELL\_DCH state:
  - 2> if receiving an MBMS service that is provided via a p-t-m radio bearer and not monitoring MICH:
    - 3> acquire the MBMS MODIFIED SERVICES INFORMATION message from MCCH at the start of every modification period, in accordance with subclause 8.7.1.3;
    - 3> handle the MBMS MODIFIED SERVICES INFORMATION message as specified in subclause 8.7.3.4.

#### 8.7.3.3.2 Void

#### 8.7.3.3.3 Reception via DCCH

Notification via DCCH is used to notify the UE about the start of a session for which a PL applies, to notify the UE about the establishment of a p-t-m radio bearer and to request a UE in PMM\_idle state to establish a PMM connection to enable reception of a service provided via a p-t-p radio bearer.

Upon receiving the MBMS MODIFIED SERVICES INFORMATION message via DCCH, a UE in CELL\_DCH shall:

1> handle the MBMS MODIFIED SERVICES INFORMATION message as specified in subclause 8.7.3.4.

## 8.7.3.4 UE action upon receiving MBMS MODIFIED SERVICES INFORMATION message

Upon receiving the MBMS MODIFIED SERVICES INFORMATION message, if the IE "MIB Value tag" is present, the UE should check it to ensure that the stored system information blocks are up to date. If the received IE "MIB Value tag" does not match the value tag stored in the variable VALUE\_TAG for the master information block the UE should not consider any MBMS configuration stored or received to be valid, until the stored system information blocks are up to date.

Upon receiving the MBMS MODIFIED SERVICES INFORMATION message, the UE shall act as follows for each of the services included in this messages provided that the service is included in variable MBMS\_ACTIVATED\_SERVICES and upper layers indicate that the session has not yet been received correctly (referred to as 'applicable services'):

- 1> if the IE "MBMS all unmodified p-t-m services" is included in the MBMS MODIFIED SERVICES INFORMATION messages:
  - 2> for all services listed in the message UNMODIFIED SERVICES INFORMATION, provided that the service is included in variable MBMS\_ACTIVATED\_SERVICES, upper layers indicate that the session has not yet been received correctly (referred to as 'applicable services') and the IE "MBMS required UE action" in the message MBMS UNMODIFIED SERVICES INFORMATION is set to "Acquire PTM RB info":
    - 3> continue acquiring the MBMS UNMODIFIED SERVICES INFORMATION, MBMS COMMON P-T-M RB INFORMATION, MBMS CURRENT CELL P-T-M RB INFORMATION, and for FDD and 3.84/7.68 Mcps TDD cells not operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION messages without delaying reading of MCCH until the next modification period and without stopping at the end of the modification period, in accordance with subclause 8.7.1.3;
    - 3> act upon the MBMS UNMODIFIED SERVICES INFORMATION MBMS COMMON P-T-M RB INFORMATION, MBMS CURRENT CELL P-T-M RB INFORMATION and for FDD and 3.84/7.68 Mcps TDD cells not operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION message, if received, in accordance with subclause 8.7.5, and assuming the p-t-m configuration indicated in these messages is valid immediately, unless the IE "MBMS p-t-m activation time" is included in the MBMS MODIFIED SERVICES INFORMATION message.
  - 2> if the UE receives an MBMS service using a p-t-m radio bearer and the messages MBMS UNMODIFIED SERVICES INFORMATION and MBMS MODIFIED SERVICES INFORMATION do not contain an IE "MBMS required action" set to "Acquire PTM RB info" or set to "Acquire counting info PTM RBs unmodified" for that service then the UE shall:
    - 3> stop receiving the concerned MBMS service and clear all service specific information applicable for the concerned service.
    - 3> if the UE is in a state other than CELL\_DCH (for FDD) or if the UE is in Idle mode, URA\_PCH or CELL\_PCH state (for TDD); and
    - 3> if the UE does not decide to receive an MBMS service; and
    - 3> if the variable MBMS\_PREV\_FREQUENCY\_INFO is not empty:
      - 4> if any frequency in SIB11 or SIB12 has the same frequency stored in the variable MBMS\_PREV\_FREQUENCY\_INFO:

- 5> select a suitable UTRA cell in that frequency;
- 5> if no suitable UTRA cell in that frequency is found:
  - 6> select a suitable UTRA cell in another frequency.
- 4> if no frequency in SIB11 or SIB12 has the same frequency stored in the variable MBMS\_PREV\_FREQUENCY\_INFO:
  - 5> select a frequency randomly among the inter-frequencies indicated in SIB11 or SIB12:
    - 6> select a suitable UTRA cell in the selected frequency;
    - 6> if no suitable UTRA cell in the selected frequency is found:
      - 7> select a suitable UTRA cell in another frequency.
- 4> clear the variable MBMS\_PREV\_FREQUENCY\_INFO.
- NOTE: The UE is only required to acquire the relevant SIB11 or SIB12, according to what is specified in subclauses 8.1.1.6.11 and 8.1.1.6.12.
- 1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following
- 1> if one or more preferred frequency applies for the applicable services:
  - 2> acquire the MBMS GENERAL INFORMATION message.
- 1> perform the MBMS frequency selection procedure as specified in subclause 8.5.27;
- 1> the procedure ends.

#### 8.7.3.5 UE fails to receive MBMS Notification information

If the UE fails to receive the MBMS MODIFIED SERVICES INFORMATION message within the current modification period, the UE shall:

- 1> Acquire the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages without delaying reading of MCCH until the next modification period and with stopping at the end of that modification period, in accordance with subclause 8.7.1.3;
- 1> act upon the received MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages as specified in subclause 8.7.2.4.

#### 8.7.4 MBMS counting

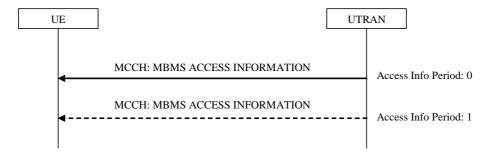


Figure 8.7.4-1: MBMS counting, normal

#### 8.7.4.1 General

The MBMS counting procedure is used by the UE to inform UTRAN about its interest to receive an MBMS transmission. The procedure applies to UEs supporting MBMS that are in idle mode or in connected mode for cells not operating in MBSFN mode as indicated in subclause 8.1.1.6.3. In connected mode the procedure applies to the

URA\_PCH, Cell\_PCH and/ or Cell\_FACH states dependent upon the value of the IE "Connected mode counting scope".

#### 8.7.4.2 Initiation

The UE initiates the MBMS counting procedure for an MBMS transmission upon receiving an MBMS MODIFIED SERVICES message including IE "MBMS required UE action" with the value set to 'Acquire counting info' or set to "Acquire counting info- PTM RBs unmodified".

#### 8.7.4.3 Reception of the MBMS ACCESS INFORMATION

For cells not operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE shall acquire the MBMS ACCESS INFORMATION message without delaying reading of MCCH until the next modification period in accordance with subclause 8.7.1.3. If the procedure the UE would apply to respond to counting (Idle mode: RRC connection establishment, connected mode: Cell update) is ongoing, the UE may defer acquiring the MBMS ACCESS INFORMATION message until this procedure has completed.

The UE behaviour upon receiving an MBMS ACCESS INFORMATION message that is contained in more than one TTI is not specified.

Upon receiving the MBMS ACCESS INFORMATION message for cells not operating in MBSFN mode as indicated in subclause 8.1.1.6.3 including one or more MBMS service(s) it has joined and/or including one or more MBMS Selected Services, the UE shall for each joined and/or selected service:

#### 1> if the UE is in idle mode:

- 2> draw a random number, "rand", uniformly distributed in the range:  $0 \le \text{rand} < 1$
- 2> if 'rand' is lower than the value indicated by the IE 'Access probability factor-Idle' for the concerned service:
  - 3> indicate to upper layers that establishment of an RRC connection is required to receive the concerned MBMS service, with the establishment cause set to 'MBMS reception';
  - 3> if the above condition applies for more than one service, initiate a single indication to upper layers;
  - 3> if the RRC connection establishment succeeds, the procedure ends.

#### 2> otherwise:

- 3> if the message triggering the MBMS counting procedure included the IE "Continue MCCH reading" with a value set to TRUE:
  - 4> continue acquiring further MBMS ACCESS INFORMATION messages without delaying reading of MCCH until the next modification period and without stopping at the end of the modification period, in accordance with subclause 8.7.1.3.

#### 3> otherwise:

- 4> continue acquiring further MBMS ACCESS INFORMATION messages without delaying reading of MCCH until the next modification period and with stopping at the end of the modification period, in accordance with subclause 8.7.1.3.
- 1> if the UE is in URA\_PCH state, Cell\_PCH or Cell\_FACH state and the IE "Connected mode counting scope" indicates that counting is applicable for this UE state:
  - 2> draw a random number, "rand", uniformly distributed in the range:  $0 \le \text{rand} < 1$ .
- 2> if 'rand' is lower than the value indicated by the IE 'Access probability factor-connected' for the concerned service:
  - 3> if a cell update has not been successfully transmitted for this service in the current modification period:
    - 4> initiate the cell update procedure with 'Cell update cause' set to "MBMS reception", in accordance with subclause 8.3.1;

- 4> if the above condition applies for more than one service, initiate a single cell update;
- 4> if the cell update procedure succeeds,
  - 5> the procedure ends.

#### 2> otherwise:

- 3> if the message triggering the MBMS counting procedure included the IE "Continue MCCH reading" with a value set to TRUE:
  - 4> continue acquiring further MBMS ACCESS INFORMATION messages without delaying reading of MCCH until the next modification period and without stopping at the end of the modification period, in accordance with subclause 8.7.1.3.

#### 3> otherwise:

4> continue acquiring further MBMS ACCESS INFORMATION messages without delaying reading of MCCH until the next modification period and with stopping at the end of the modification period, in accordance with subclause 8.7.1.3.

#### 1> otherwise:

2> the procedure ends;

Upon receiving the MBMS ACCESS INFORMATION message not including an MBMS service(s) the UE has joined or selected:

1> the procedure ends;

#### 8.7.4.4 Termination of the MBMS counting procedure

If the UE detects that the MBMS ACCESS INFORMATION message is not provided at an access info period; OR

If the UE receives an MBMS ACCESS INFORMATION message not including an MBMS service the UE has joined or selected, the UE shall:

1> terminate the MBMS counting procedure.

If the UE receives an RRC CONNECTION REJECT message with Rejection Cause 'unspecified' and including the MBMS "Counting completion" IE, the UE shall:

- 1> consider the MBMS counting procedure ended for the MBMS service(s) for which the UE has initiated the MBMS counting response;
- 1> indicate to upper layers that the establishment of an RRC connection with the establishment cause set to 'MBMS reception' shall be aborted.

#### 8.7.4.5 Failure of the counting response procedure

If the counting response procedure (RRC connection establishment or Cell update) fails, the UE shall:

- 1> if the failure occurs in the same modification period as the one in which the UE initiated the counting response procedure; or
- 1> if the message triggering the MBMS counting procedure included the IE "Continue MCCH reading" with a value set to TRUE that is applicable in the modification period in which the UE detects the failure:
  - 2> continue acquiring further MBMS ACCESS INFORMATION messages without delaying reading of MCCH until the next modification period and without stopping at the end of the modification period, in accordance with subclause 8.7.1.3.

#### 1> otherwise:

2> the procedure ends.

#### 8.7.5 MBMS p-t-m radio bearer configuration

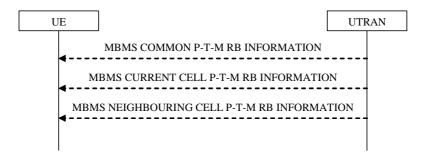


Figure 8.7.5-1: MBMS p-t-m radio bearer modification, normal

#### 8.7.5.1 General

The MBMS p-t-m radio bearer configuration procedure is used by the UE to acquire the (modified) radio bearer configuration for one or more activated MBMS services. The procedure applies to all UEs supporting MBMS, irrespective of their state (idle and connected mode: URA PCH, CELL PCH, CELL FACH and CELL DCH).

#### 8.7.5.2 Initiation

The UE applies the MBMS p-t-m radio bearer configuration procedure whenever it detects that one of the activated services is provided by means of a p-t-m radio bearerer. This may occur as part of the MCCH acquisition or the MBMS Notification procedure.

#### 8.7.5.3 Reception of the MBMS Current Cell PTM RB information

Upon completing the reception of the MBMS COMMON P-T-M RB INFORMATION and the MBMS CURRENT CELL P-T-M RB INFORMATION messages for an activated MBMS service, the UE shall:

- 1> if the UE is already receiving an MTCH and does not have the capability to receive the new service in addition:
  - 2> the UE behaviour is undefined.
- NOTE: In this case, the UE may request upper layers to prioritise the services and only receive the service(s) prioritised by upper layers.
- 1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:
- 1> if the UE previously received the service by means of a p-t-m radio bearer from a cell belonging to another MBMS cell group:
  - 2> re-establish RLC;
  - 2> re-initialise PDCP.
- 1> start immediately to use the indicated configuration unless specified otherwise;
- 1> start or continue receiving the indicated p-t-m radio bearers depending on its UE capabilities.

The UE shall continue acquiring the above messages until it has received a consistent set of MCCH information i.e. the MBMS MODIFIED SERVICES INFORMATION message, MBMS UNMODIFIED SERVICES INFORMATION message, MBMS COMMON P-T-M RB INFORMATION and the MBMS CURRENT CELL P-T-M RB INFORMATION message should be acquired in the same modification period.

#### 8.7.5.4 Reception of the MBMS Neighbouring Cell PTM RB information

Upon receiving the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION message for an activated MBMS service for a cell not operating in MBSFN mode as indicated in subclause 8.1.1.6.3, the UE shall:

- 1> start immediately to use the indicated neighbouring cells and configuration, or a subset of them, for L1- or L2 combining or Chip combining (1.28Mcps TDD only) unless specified otherwise;
- 1> start or continue receiving the indicated p-t-m radio bearers from the selected neighbouring cells depending on its UE capabilities.

The UE shall apply MBMS NEIGHBOURING CELL P-T-M RB INFORMATION only in combination with an MBMS MODIFIED SERVICES INFORMATION message, MBMS UNMODIFIED SERVICES INFORMATION message, MBMS COMMON P-T-M RB INFORMATION and MBMS CURRENT CELL P-T-M RB INFORMATION message acquired in the same modification period.

#### 8.7.6 MBMS modification request



Figure 8.7.6-1: MBMS modification request, normal

#### 8.7.6.1 General

The MBMS modification request procedure is used by the UE to request UTRAN to release the p-t-p radio bearers ofone or more MBMS services the UE is receiving. The procedure is also used to request to be moved to a preferred frequency applicable for one or more (prioritised) activated MBMS services the UE, and to indicate the UE MBMS Selected Services. The procedure applies to all UEs supporting MBMS, that are in CELL\_DCH, CELL\_PCH, URA\_PCH or CELL\_FACH state.

#### 8.7.6.2 Initiation

A UE entering CELL\_DCH shall initiate the MBMS modification request procedure in the following cases:

- 1> if the UE has any MBMS Selected Service; and
- 1> if the IE "MCCH configuration information" was received in System Information Block Type 5 or System Information Block Type 5bis prior to entering CELL\_DCH.

A UE completing an RRC Connection Setup procedure shall initiate the MBMS modification request procedure in the following cases:

- 1> if the UE has any MBMS Selected Service; and
- 1> if the IE "MCCH configuration information" was received in System Information Block Type 5 or System Information Block Type 5bis prior to completing the RRC Connection Setup procedure.

A UE in CELL DCH shall initiate the MBMS modification request procedure in the following cases:

- 1> the preferred frequency applicable for the MBMS service prioritised by upper layers is different from the currently used frequency;
- 1> upper layers request to discontinue reception of an MBMS service provided via a p-t-p radio bearer e.g. because this inhibits reception of a higher priority service;
- 1> upon a change in selection of the MBMS Selected Services.

NOTE: The above case may occur upon receiving a dedicated notification or in other cases eg. a change of transfer mode from p-t-p to p-t-m for the UE's highest priority MBMS service.

A UE in CELL\_FACH, CELL\_PCH or URA\_PCH state shall initiate the MBMS modification request procedure in the following cases:

- 1> upon a change in selection of the MBMS Selected Services that are indicated on MCCH; and
- 1> if the IE "Indicate changes in MBMS Selected Services" that is included in the MBMS GENERAL INFORMATION message is set to TRUE.

If the UE is required to initiate the MBMS modification request procedure as specified in the conditions above, the UE shall:

1> transmit an MBMS MODIFICATION REQUEST message with the contents as specified in subclause 8.7.6.2a.

If applicable, the UE shall use a single MBMS MODIFICATION REQUEST message to request a move to the preferred frequency and/or to request release of radio bearers corresponding with lower priority MBMS services provided p-t-p and/or to report the MBMS Selected Services.

#### 8.7.6.2a MBMS MODIFICATION REQUEST message contents to set

The UE shall set the contents of the MBMS MODIFICATION REQUEST message as follows:

- 1> if the preferred frequency applicable for the MBMS service prioritised by upper layers is different from the currently used frequency:
  - 2> include the IE "MBMS preferred frequency request" and set it to the prioritised MBMS service identity;
- 1> if upper layers request to discontinue reception of an MBMS service provided via a p-t-p radio bearer:
  - 2> include the p-t-p radio bearers used for the corresponding MBMS services within the IE "MBMS RB list requested to be released".
- 1> if the UE enters CELL\_DCH; or
- 1> if the UE completes the RRC connection establishment procedure; or
- 1> if there is a change in selection of one or more of the MBMS Selected Services:
  - 2> if the UE has not selected any MBMS Selected Service:
    - 3> include the IE "MBMS Selected Service Info" and set the Status to 'None'.
  - 2> otherwise:
    - 3> include the IE "MBMS Selected Service Info" and set the Status to 'Some';
    - 3> include the IE "Support of MBMS service change for a ptp RB";
    - 3> for each MBMS Selected Service:
      - 4> order the MBMS Selected Services such that those selected with a higher priority are listed in the IE "MBMS Selected Services Full" before those selected with a lower priority;
      - 4> include the IE "MBMS Selected Service ID" within the IE "MBMS Selected Services Full".

#### 8.7.6.3 Reception of a MBMS MODIFICATION REQUEST message by the UTRAN

Upon reception of a MBMS MODIFICATION REQUEST message, the UTRAN may take further action depending on the contents of the received message.

The procedure ends.

#### 8.7.7 MBMS service scheduling

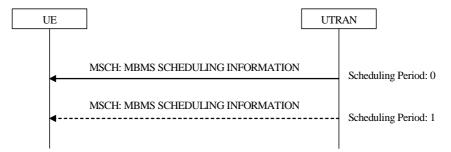


Figure 8.7.7-1: MBMS service scheduling, normal

#### 8.7.7.1 General

The MBMS service scheduling procedure is used by the UE that is receiving one or more activated MBMS services to acquire the MBMS scheduling information for the MBMS services. The procedure applies to all UEs that are receiving an MBMS service provided via a p-t-m radio bearer, irrespective of their state (idle and connected mode: URA\_PCH, CELL\_PCH, CELL\_FACH and CELL\_DCH).

#### 8.7.7.2 Initiation

The UE may initiate the MBMS service scheduling procedure for any scheduling period of the concerned MBMS service while receiving an SCCPCH carrying an MBMS service.

#### 8.7.7.3 Reception of the MBMS scheduling information

Upon receiving the MBMS SCHEDULING INFORMATION message, the UE should:

- 1> act as follows for each of the services included in these messages provided that the service is included in variable MBMS\_ACTIVATED\_SERVICES;
- 1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following.

The procedure ends.

# 9 Handling of unknown, unforeseen and erroneous protocol data

#### 9.1 General

This subclause specifies procedures for the handling of unknown, unforeseen, and erroneous protocol data by the receiving entity. These procedures are called "error handling procedures", but in addition to provide recovery mechanisms for error situations they define a compatibility mechanism for future extensions of the protocol.

The error handling procedures specified in this subclause shall apply to all RRC messages. When there is a specific handling for messages received on different logical channels this is specified.

For system information received on the BCCH, the error handling procedures are applied on the BCCH message SYSTEM INFORMATION, the re-assembled system information segments as well as the system information blocks (including the master information block and the scheduling blocks), with specific error handling as specified below.

When the UE receives an RRC message, it shall set the variable PROTOCOL\_ERROR\_REJECT to FALSE and then perform the checks in the order as defined below.

The error cases specified in the following include the handling upon reception of spare values. This behaviour also applies in case the actual value of the IE results from mapping the originally sent IE value. Moreover, in certain error cases, as specified in the following, default values apply. In this case, the default values specified within the ASN.1, the tabular and the procedure specifications apply.

## 9.2 ASN.1 violation or encoding error

If the UE receives an RRC message on the DCCH for which the encoded message does not result in any valid abstract syntax value [49] (or "encoding error"), it shall perform the following. The UE shall:

- 1> set the variable PROTOCOL\_ERROR\_REJECT to TRUE;
- 1> transmit an RRC STATUS message on the uplink DCCH. The IE "Protocol error information" shall contain an IE "Protocol error cause" set to "ASN.1 violation or encoding error";
- 1> when RRC STATUS message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid message had not been received.
- NOTE In this case, the UE does not perform procedure specific error handling according to clause 8.

If the UE receives an RRC message sent via a radio access technology other than UTRAN, for which the encoded message does not result in any valid abstract syntax, the UE shall:

- 1> set the variable PROTOCOL ERROR REJECT to TRUE;
- 1> set the IE "Protocol error cause" in the variable PROTOCOL\_ERROR\_INFORMATION to "ASN.1 violation or encoding error";
- 1> perform procedure specific error handling according to clause 8.

If a reassembled set of system information segments received in messages on the BCCH does not result in any valid abstract syntax value, the UE shall:

- 1> ignore the reassembled set of system information segments;
- 1> treat the rest of each message containing the ignored system information segments as if those segments were not present.

If the UE receives an RRC message on the BCCH, PCCH, CCCH, MCCH, MSCH or SHCCH for which the encoded message does not result in any valid abstract syntax value, it shall ignore the message.

## 9.3 Unknown or unforeseen message type

If a UE receives an RRC message on the DCCH with a message type not defined for the DCCH it shall:

- 1> set the variable PROTOCOL\_ERROR\_REJECT to TRUE;
- 1> transmit an RRC STATUS message on the uplink DCCH. The IE "Protocol error information" shall contain an IE "Protocol error cause" set to "Message type non-existent or not implemented";
- 1> when the RRC STATUS message has been submitted to lower layers for transmission:
  - 2> continue with any ongoing processes and procedures as if the invalid message had not been received.

If the UE receives an RRC message on the BCCH, PCCH, CCCH, MCCH, MSCH or SHCCH with a message type not defined for the logical channel type the message was received on, it shall ignore the message.

## 9.3a Unsolicited received message

If the UE receives any of the following messages:

- an RRC CONNECTION SETUP message addressed to the UE on the CCCH; or

- an RRC CONNECTION REJECT message addressed to the UE on the CCCH; or
- a UE CAPABILITY INFORMATION CONFIRM message on the DCCH; or
- a CELL UPDATE CONFIRM message addressed to the UE on the CCCH or on the DCCH; or
- a URA UPDATE CONFIRM message addressed to the UE on the CCCH or on the DCCH

and no procedure is ongoing according to clause 8 which expects the message to be received:

the UE shall:

1> ignore the received message.

## 9.3b Unexpected critical message extension

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined critical message extension, the UE shall:

- 1> set the variable PROTOCOL\_ERROR\_REJECT to TRUE;
- 1> set the IE "Protocol error cause" in the variable PROTOCOL\_ERROR\_INFORMATION to "Message extension not comprehended";
- 1> if the IE "Message Type" of the received message is not present in the table "Rejected transactions" in the variable TRANSACTIONS:
  - 2> store the IE "Message type" of the received message in the table "Rejected transactions" in the variable TRANSACTIONS; and
  - 2> set the IE "RRC transaction identifier" to zero in that table entry.
- 1> perform procedure specific error handling according to clause 8.

If the UE receives an RRC message on the BCCH, MCCH, MSCH or PCCH, containing an undefined critical message extension, the UE shall:

1> ignore the message.

# 9.4 Unknown or unforeseen information element value, mandatory information element

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, with a mandatory IE having a value, including choice, reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), the UE shall:

- 1> if a default value of the IE is defined:
  - 2> treat the rest of the message using the default value of the IE.
- 1> if no default value of the IE is defined:
  - 2> set the variable PROTOCOL\_ERROR\_REJECT to TRUE;
  - 2> set the IE "Protocol error cause" in the variable PROTOCOL\_ERROR\_INFORMATION to "Information element value not comprehended";
  - 2> perform procedure specific error handling according to clause 8.

If the UE receives a system information block on the BCCH with a mandatory IE having a value reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), the UE shall:

1> if a default value of the IE is defined:

- 2> treat the rest of the system information block using the default value of the IE.
- 1> if no default value of the IE is defined:
  - 2> ignore the system information block.

If the UE receives an RRC message on the BCCH, MCCH, MSCH or PCCH with a mandatory IE having a value reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), the UE shall:

- 1> if a default value of the IE is defined:
  - 2> treat the rest of the message using the default value of the IE.
- 1> if no default value of the IE is defined:
  - 2> ignore the message.

#### 9.5 Conditional information element error

If the UE receives an RRC message on the DCCH, BCCH, PCCH, MCCH, MSCH or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, for which the specified conditions for absence of a conditional IE are met and that IE is present, the UE shall:

- 1> ignore the IE;
- 1> treat the rest of the message as if the IE was not present.

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, for which the specified conditions for presence of a conditional IE are met and that IE is absent, the UE shall:

- 1> set the variable PROTOCOL\_ERROR\_REJECT to TRUE;
- 1> set the IE "Protocol error cause" in the variable PROTOCOL\_ERROR\_INFORMATION to "Information element missing";
- 1> perform procedure specific error handling according to clause 8.

If the UE receives a system information block on the BCCH for which the specified conditions for presence of a conditional IE are met and that IE is absent, the UE shall:

1> ignore the system information block.

If the UE receives an RRC message on the BCCH, MCCH, MSCH or PCCH for which the specified conditions for presence of a conditional IE are met and that IE is absent, the UE shall:

1> ignore the message.

## 9.6 Unknown or unforeseen information element value, conditional information element

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), the UE shall:

- 1> if a default value of the IE is defined:
  - 2> treat the rest of the message using the default value of the IE.
- 1> if no default value of the IE is defined:
  - 2> set the variable PROTOCOL ERROR REJECT to TRUE;

- 2> set the IE "Protocol error cause" in the variable PROTOCOL\_ERROR\_INFORMATION to "Information element value not comprehended";
- 2> perform procedure specific error handling according to clause 8.

If the UE receives a system information block on the BCCH for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), the UE shall:

- 1> if a default value of the IE is defined:
  - 2> treat the rest of the system information block using the default value of the IE.
- 1> if no default value of the IE is defined:
  - 2> ignore the system information block.

If the UE receives an RRC message on the BCCH, MCCH, MSCH or PCCH for which the specified conditions for presence of a conditional IE are met, that IE is present, and that IE has a value, including choice, reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), the UE shall:

- 1> if a default value of the IE is defined:
  - 2> treat the rest of the message using the default value of the IE.
- 1> if no default value of the IE is defined:
  - 2> ignore the message.

## 9.7 Unknown or unforeseen information element value, optional information element

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, with an optional IE having a value, including choice, reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), it shall:

- 1> ignore the value of the IE;
- 1> treat the rest of the message as if the IE was not present.

If the UE receives a system information block on the BCCH with an optional IE having a value, including choice, reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), it shall:

- 1> ignore the value of the IE;
- 1> treat the rest of the system information block as if the IE was not present.

If the UE receives an RRC message on the BCCH, MCCH or MSCH or PCCH with an optional IE having a value, including choice, reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), it shall:

- 1> ignore the value of the IE;
- 1> treat the rest of the message as if the IE was not present.

## 9.8 Unexpected non-critical message extension

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined non-critical message extension, the UE shall:

1> if the non critical extension is included in the "Variable Length Extension Container":

2> ignore the content of the extension and the contents of this container after the not comprehended extension, and continue decoding the rest of the message.

#### 1> otherwise:

2> ignore the content of the extension and the message contents after the extension, but treat the parts of the message up to the extension normally.

If the UE receives a system information block on the BCCH containing an undefined non-critical message extension, the UE shall:

1> ignore the content of the extension and the system information block contents after the extension, but treat the parts of the system information block up to the extension normally.

If the UE receives an RRC message on the BCCH, MCCH or MSCH or PCCH, containing an undefined non-critical message extension, the UE shall:

1> ignore the content of the extension and the message contents after the extension, but treat the parts of the message up to the extension normally.

## 9.9 Handling of errors in nested information elements

An erroneous IE may be included in another IE, which may be included in another IE and so on. This subclause specifies the handling of errors in mandatory IEs as well as for conditional IEs for which the specified conditions for presence are met, that are nested in another IE.

In case the UE receives an IE (IE1) that includes a mandatory IE (IE1-1) having a value, including choice, reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), the UE shall:

1> consider IE1 to have an undefined value; and

1> apply the corresponding generic error handling to IE1.

In case there are many IE nesting levels, in all of which the IE is mandatory while no default value is defined, this treatment may need to be repeated several times. The following example illustrates the general principle.

```
ExampleMessage ::=
                                      SEQUENCE {
    ie1
                                          IE1
                                                                              OPTIONAL,
    ie2
                                          IE2
IE1
                                       SEQUENCE {
                                          INTEGER (1..16),
    -- iel-1 values 13..16 are spare and should not be used in this version of the protocol
    ie1-2
                                          IE1-2
                                                                             OPTIONAL.
    ie1-3
                                          IE1-3
```

If in the above example, UTRAN would include ie1 and set ie1-1 to value 13, the UE experiences an error in a mandatory IE. The guideline outlined in the previous then means that the UE shall not discard the entire message but instead consider "ie1" to have an unknown value. Since IE1 is optional, the generic error handling would be to ignore "ie1".

In case the UE receives an IE (IE1) that includes a list of another IE (IE1-1) for which one or more entries in the list have a value, including choice, reserved for future extension (spare) or a value not used in this version of the specification (e.g. a dummy value), the UE shall:

1> consider the list as if these entries were not included.

NOTE: In case the above generic error handling procedures do not result in the desired behaviour, the introduction of spares may need to be reconsidered.

# Message and information element functional definition and content

### 10.1 General

The function of each Radio Resource Control message together with message contents in the form of a list of information elements is defined in subclause 10.2.

Functional definitions of the information elements are then described in subclause 10.3.

Information elements are marked as either MP - Mandatory present, MD - Mandatory with default value, OP - Optional, CV - Conditional on value or CH - Conditional on history (see Table 10.1 with information extracted from [14]).

Table 10.1: Meaning of abbreviations used in RRC messages and information elements

| Abbreviation | Meaning  |
|--------------|--|
| MP           | Mandatory present A value for that information is always needed, and no information is provided about a particular default value. If ever the transfer syntax allows absence (e.g., due to extension), then absence leads to an error diagnosis.   |
| MD           | Mandatory with default value A value for that information is always needed, and a particular default value is mentioned (in the 'Semantical information' column). This opens the possibility for the transfer syntax to use absence or a special pattern to encode the default value.  |
| СН           | Conditional on value The need for a value for that information depends on the value of some other IE or IEs, and/or on the message flow (e.g., channel, SAP). The need is specified by means of a condition, the result of which may be that the information is mandatory present, mandatory with default value, not needed or optional.  If one of the results of the condition is that the information is mandatory present, the transfer syntax must allow for the presence of the information. If in this case the information is absent an error is diagnosed.  If one of the results of the condition is that the information is mandatory with default value, and a particular default value is mentioned (in the 'Semantical information' column), the transfer syntax may use absence or a special pattern to encode the default value.  If one of the results of the condition is that the information is not needed, the transfer syntax must allow encoding the absence. If in this case the information is present, it will be ignored. In specific cases however, an error may be diagnosed instead.  If one of the results of the condition is that the information is optional, the transfer syntax must allow for the presence of the information. In this case, neither absence nor presence of the information leads to an error diagnosis.  Conditional on history |
|              | The need for a value for that information depends on information obtained in the past (e.g., from messages received in the past from the peer). The need is specified by means of a condition, the result of which may be that the information is mandatory present, mandatory with default value, not needed or optional.  The handling of the conditions is the same as described for CV.  |
| ОР           | Optional  The presence or absence is significant and modifies the behaviour of the receiver. However whether the   |

| Abbreviation | Meaning   |  |
|--------------|---|--|
|              | information is present or not does not lead to an error |  |
|              | diagnosis.  |  |

#### 10.1.1 Protocol extensions

RRC messages may be extended in future versions of this protocol, either by adding values for choices, enumerated and size constrained types or by adding information elements. An important aspect concerns the behaviour of a UE, conforming to this revision of the standard, upon receiving a not comprehended future extension. The details of this error handling behaviour are provided in clause 9.

NOTE 1: By avoiding the need for partial decoding (skipping uncomprehended IEs to continue decoding the remainder of the message), the RRC protocol extension mechanism also avoids the overhead of length determinants for extensions. "Variable length extension containers" (i.e. non critical extension containers that have their abstract syntax defined using the ASN.1 type "BIT STRING") have been defined to support the introduction of extensions to a release after the subsequent release is frozen (and UEs based on that subsequent release may appear). For this container a length determinant is used, which facilitates partial decoding of the container as well as the decoding of the extensions included after the container.

Two kinds of protocol extensions are distinguished: non-critical and critical extensions. In general, a receiver shall process a message including not comprehended non-critical extensions as if the extensions were absent. However, a receiver shall entirely reject a message including not comprehended critical extensions (there is no partial rejection) and notify the sender, as specified in clause 9.

The general mechanism for adding critical extensions is by defining a new version of the message, which is indicated at the beginning of the message.

The UE shall always comprehend the complete transfer syntax specified for the protocol version it supports; if the UE comprehends the transfer syntax defined within protocol version A for message 1, it shall also comprehend the transfer syntax defined within protocol version A for message 2.

The following table shows for which messages only non-critical extensions may be added while for others both critical and non-critical extensions may be added.

NOTE 2: Critical extensions can only be added to certain downlink messages.

| Extensions                | Message                                     |
|---------------------------|---|
| Critical and non-critical | ACTIVE SET UPDATE 10.2.1                    |
| extensions                | ASSISTANCE DATA DELIVERY 10.2.4             |
|                           | CELL CHANGE ORDER FROM UTRAN 10.2.5         |
|                           | CELL UPDATE CONFIRM 10.2.8                  |
|                           | COUNTER CHECK 10.2.9                        |
|                           | DOWNLINK DIRECT TRANSFER 10.2.11            |
|                           | HANDOVER TO UTRAN COMMAND 10.2.16a          |
|                           | HANDOVER FROM UTRAN COMMAND 10.2.15         |
|                           | MEASUREMENT CONTROL 10.2.17                 |
|                           | PHYSICAL CHANNEL RECONFIGURATION 10.2.22    |
|                           | PHYSICAL SHARED CHANNEL ALLOCATION 10.2.25  |
|                           | RADIO BEARER RECONFIGURATION 10.2.27        |
|                           | RADIO BEARER RELEASE 10.2.30                |
|                           | RADIO BEARER SETUP 10.2.33                  |
|                           | RRC CONNECTION REJECT 10.2.36               |
|                           | RRC CONNECTION RELEASE 10.2.37              |
|                           | RRC CONNECTION SETUP 10.2.40                |
|                           | SECURITY MODE COMMAND 10.2.43               |
|                           | SIGNALLING CONNECTION RELEASE 10.2.46       |
|                           | TRANSPORT CHANNEL RECONFIGURATION 10.2.50   |
|                           | UE CAPABILITY ENQUIRY 10.2.55               |
|                           | UE CAPABILITY INFORMATION CONFIRM 10.2.57   |
|                           | UPLINK PHYSICAL CHANNEL CONTROL 10.2.59     |
|                           | URA UPDATE CONFIRM 10.2.61                  |
|                           | UTRAN MOBILITY INFORMATION 10.2.62          |
| Non-critical extensions   | ACTIVE SET UPDATE COMPLETE 10.2.2           |
| only                      | ACTIVE SET UPDATE FAILURE 10.2.3            |
| - ,                       | CELL CHANGE ORDER FROM UTRAN FAILURE 10.2.6 |

| Extensions    | Message   |  |  |  |  |  |
|---------------|---|--|--|--|--|--|
|               | CELL UPDATE 10.2.7  |  |  |  |  |  |
|               | COUNTER CHECK RESPONSE 10.2.10  |  |  |  |  |  |
|               | HANDOVER TO UTRAN COMPLETE 10.2.16b   |  |  |  |  |  |
|               | INITIAL DIRECT TRANSFER 10.2.16c  |  |  |  |  |  |
|               | HANDOVER FROM UTRAN FAILURE 10.2.16   |  |  |  |  |  |
|               | MBMS ACCESS INFORMATION 10.2.16e  |  |  |  |  |  |
|               | MBMS COMMON P-T-M RB INFORMATION 10.2.16f   |  |  |  |  |  |
|               | MBMS CURRENT CELL P-T-M RB INFORMATION 10.2.16g   |  |  |  |  |  |
|               | MBMS GENERAL INFORMATION 10.2.16h   |  |  |  |  |  |
|               | MBMS MODIFICATION REQUEST 10.2.16i  |  |  |  |  |  |
|               | MBMS MODIFIED SERVICES INFORMATION 10.2.16j   |  |  |  |  |  |
|               | MBMS NEIGHBOURING CELL P-T-M RB INFORMATION 10.2.16k  |  |  |  |  |  |
|               | MBMS SCHEDULING INFORMATION 10.2.16L  |  |  |  |  |  |
|               | MBMS UNMODIFIED SERVICES INFORMATION 10.2.16m   |  |  |  |  |  |
|               | MEASUREMENT CONTROL FAILURE 10.2.18   |  |  |  |  |  |
|               | MEASUREMENT REPORT 10.2.19  |  |  |  |  |  |
|               | PAGING TYPE 1 10.2.20   |  |  |  |  |  |
|               | PAGING TYPE 2 10.2.21   |  |  |  |  |  |
|               | PHYSICAL CHANNEL RECONFIGURATION COMPLETE 10.2.23   |  |  |  |  |  |
|               | PHYSICAL CHANNEL RECONFIGURATION FAILURE 10.2.24  |  |  |  |  |  |
|               | PUSCH CAPACITY REQUEST 10.2.26  |  |  |  |  |  |
|               | RADIO BEARER RECONFIGURATION COMPLETE 10.2.28   |  |  |  |  |  |
|               | RADIO BEARER RECONFIGURATION FAILURE 10.2.29  |  |  |  |  |  |
|               | RADIO BEARER RELEASE COMPLETE 10.2.31   |  |  |  |  |  |
|               | RADIO BEARER RELEASE FAILURE 10.2.32  |  |  |  |  |  |
|               | RADIO BEARER SETUP COMPLETE 10.2.34   |  |  |  |  |  |
|               | RADIO BEARER SETUP FAILURE 10.2.35  |  |  |  |  |  |
|               | RRC CONNECTION RELEASE COMPLETE 10.2.38   |  |  |  |  |  |
|               | RRC CONNECTION REQUEST 10.2.39  |  |  |  |  |  |
|               | RRC CONNECTION SETUP COMPLETE 10.2.41   |  |  |  |  |  |
|               | RRC STATUS 10.2.42  |  |  |  |  |  |
|               | SECURITY MODE COMPLETE 10.2.44  |  |  |  |  |  |
|               | SECURITY MODE FAILURE 10.2.45   |  |  |  |  |  |
|               | SIGNALLING CONNECTION RELEASE INDICATION 10.2.47  |  |  |  |  |  |
|               | Master Information Block 10.2.48.8.1 System Information Block type 1 to                         |  |  |  |  |  |
|               | System Information Block type 1 to System Information Block type 18 10.2.48.8.4 to 10.2.48.8.21 |  |  |  |  |  |
|               | SYSTEM INFORMATION CHANGE INDICATION 10.2.49  |  |  |  |  |  |
|               | TRANSPORT CHANNEL RECONFIGURATION COMPLETE 10.2.51  |  |  |  |  |  |
|               | TRANSPORT CHANNEL RECONFIGURATION FAILURE 10.2.52   |  |  |  |  |  |
|               | TRANSPORT FORMAT COMBINATION CONTROL 10.2.53  |  |  |  |  |  |
|               | TRANSPORT FORMAT COMBINATION CONTROL FAILURE 10.2.54  |  |  |  |  |  |
|               | UE CAPABILITY INFORMATION 10.2.56   |  |  |  |  |  |
|               | UPLINK DIRECT TRANSFER 10.2.58  |  |  |  |  |  |
|               | URA UPDATE 10.2.60  |  |  |  |  |  |
|               | UTRAN MOBILITY INFORMATION CONFIRM 10.2.63  |  |  |  |  |  |
|               | UTRAN MOBILITY INFORMATION FAILURE 10.2.64  |  |  |  |  |  |
| No extensions | SYSTEM INFORMATION 10.2.48  |  |  |  |  |  |
|               | First Segment 10.2.48.1   |  |  |  |  |  |
|               | Subsequent or last Segment 10.2.48.3  |  |  |  |  |  |
|               | Complete SIB 10.2.48.5  |  |  |  |  |  |
|               | SIB content 10.2.48.8.1   |  |  |  |  |  |

NOTE 3: For the SYSTEM INFORMATION message protocol extensions are only possible at the level of system information blocks.

#### 10.1.1.1 Non-critical extensions

#### 10.1.1.1.1 Extension of an information element with additional values or choices

In future versions of this protocol, non-critical values may be added to choices, enumerated and size constrained types.

For choices, enumerated and size constrained types it is possible to indicate how many non-critical spare values need to be reserved for future extension. In this case, the tabular format should indicate the number of spare values that are

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needed. The value range defined in ASN.1 for the extensible IE should include the number of spares that are needed, since a value outside the range defined for this IE will result in a general ASN.1 violation error.

For downlink messages, spare values may be defined for non-critical information elements for which the need is specified to be MD or OP (or CV case leading to MD or OP). In this case, a receiver not comprehending the received spare value shall consider the information element to have the default value or consider it to be absent respectively.

For uplink messages spare values may be defined for all information elements, including those for which the need is specified to be MP (or CV case leading to MP).

In all cases at most one spare should be defined for choices. In this case, information elements applicable to the spare choices shall be added to the end of the message.

#### 10.1.1.1.2 Extension of a message with additional information elements

In future versions of this protocol, non-critical information elements may be added to RRC messages. These additional information elements shall be normally appended at the end of the message; the transfer syntax specified in this revision of the standard facilitates this. A receiver conformant to this revision of the standard shall accept such extension, and proceed as if it was not included.

A transmitter conformant to this version of the standard shall not include an extension reserved for introducing non critical extensions in later versions of the standard; i.e. the corresponding parameter defined in the ASN.1 shall be absent.

NOTE: If an extension, reserved for future non-critical extensions, is included (even if it is empty), this may result in transfer syntax errors when received by an implementation conforming to a later version of the standard.

Extensions to a release that are introduced after the subsequent release is frozen may however be inserted prior to the end of the message. To facilitate this, "variable length extension containers" have been introduced in most messages.

#### 10.1.1.2 Critical extensions

#### 10.1.1.2.1 Extension of an information element with additional values or choices

In versions of this protocol, choices, enumerated and size constrained types may be extended with critical values. For extension with critical values the general critical extension mechanism is used, i.e. for this no spare values are reserved since backward compatibility is not required.

#### 10.1.1.2.2 Extension of a message with additional information elements

In future versions of this protocol, RRC messages may be extended with new information elements. Since messages including critical extensions are rejected by receivers not comprehending them, these messages may be modified completely, e.g. IEs may be inserted at any place and IEs may be removed or redefined.

## 10.2 Radio Resource Control messages

#### 10.2.1 ACTIVE SET UPDATE

NOTE: Only for FDD.

This message is used by UTRAN to add, replace or delete radio links in the active set of the UE.

RLC-SAP: AM or UM
Logical channel: DCCH

Direction: UTRAN  $\rightarrow$  UE

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| Message Type                   | MP   |       | Message            |                       |         |

| Information<br>Element/Group name | Need | Multi  | Type and reference       | Semantics<br>description | Version |
|-----------------------------------|------|--|--------------------------|--------------------------|---------|
| UE information                    |      |  | Туре                     |                          |         |
| elements                          |      |  |                          |                          |         |
| RRC transaction                   | MP   |  | RRC                      |                          |         |
| identifier                        |      |  | transaction              |                          |         |
|                                   |      |  | identifier               |                          |         |
| Into with calculation for         | CLI  |  | 10.3.3.36                |                          |         |
| Integrity check info              | СН   |  | Integrity check info     |                          |         |
|                                   |      |  | 10.3.3.16                |                          |         |
| Activation time                   | MD   |  | Activation               | Default value is "now".  |         |
|                                   |      |  | time                     |                          |         |
|                                   |      |  | 10.3.3.1                 |                          |         |
| New U-RNTI                        | OP   |  | U-RNTI                   |                          |         |
|                                   |      |  | 10.3.3.47                |                          |         |
| New H-RNTI                        | OP   |  | H-RNTI                   |                          | REL-6   |
| New Primary E-RNTI                | OP   |  | 10.3.3.14a<br>E-RNTI     |                          | REL-6   |
| New Filliary E-KNTI               | OF   |  | 10.3.3.10a               |                          | KEL-0   |
| New Secondary E-RNTI              | OP   |  | E-RNTI                   |                          | REL-6   |
| -                                 |      |  | 10.3.3.10a               |                          |         |
| CN information                    |      |  |                          |                          |         |
| elements                          |      |  |                          |                          |         |
| CN Information info               | OP   |  | CN                       |                          |         |
|                                   |      |  | Information              |                          |         |
|                                   |      |  | info<br>10.3.1.3         |                          |         |
| Phy CH information                |      |  | 10.3.1.3                 |                          |         |
| elements                          |      |  |                          |                          |         |
| DTX-DRX timing                    | OP   |  | DTX-DRX                  |                          | REL-7   |
| information                       |      |  | timing                   |                          |         |
|                                   |      |  | information              |                          |         |
|                                   |      |  | 10.3.6.34b               |                          |         |
| DTX-DRX Information               | OP   |  | DTX-DRX<br>Information   |                          | REL-7   |
|                                   |      |  | 10.3.6.34a               |                          |         |
| HS-SCCH less                      | OP   |  | HS-SCCH                  |                          | REL-7   |
| Information                       |      |  | less                     |                          |         |
|                                   |      |  | Information              |                          |         |
|                                   |      |  | 10.3.6.36a               |                          |         |
|                                   |      |  | b                        |                          |         |
| MIMO parameters                   | OP   |  | MIMO                     |                          | REL-7   |
|                                   |      |  | parameter<br>s           |                          |         |
|                                   |      |  | 10.3.6.41a               |                          |         |
| Uplink radio resources            |      |  |                          |                          |         |
| Maximum allowed UL TX             | MD   |  | Maximum                  | Default value is the     |         |
| power                             |      |  | allowed UL               | existing "maximum UL     |         |
|                                   |      |  | TX power                 | TX power.                |         |
| Downlink radio                    |      |  | 10.3.6.39                |                          |         |
| resources                         |      |  |                          |                          |         |
| Radio link addition               | OP   | 1 to   |                          | Radio link addition      |         |
| information                       |      | <maxrl< td=""><td></td><td>information required</td><td></td></maxrl<> |                          | information required     |         |
|                                   |      | -1>  |                          | for each RL to add       |         |
| >Radio link addition              | MP   |  | Radio link               |                          |         |
| information                       |      |  | addition                 |                          |         |
|                                   |      |  | information<br>10.3.6.68 |                          |         |
| Radio link removal                | OP   | 1 to   | 10.3.0.00                | Radio link removal       |         |
| information                       | .    | <maxrl< td=""><td></td><td>information required</td><td></td></maxrl<> |                          | information required     |         |
| <del></del>                       |      | >  |                          | for each RL to remove    |         |
| >Radio link removal               | MP   |  | Radio link               |                          |         |
| information                       |      |  | removal                  |                          |         |
|                                   |      |  | information              |                          |         |

| Information<br>Element/Group name                   | Need | Multi | Type and reference  | Semantics description   | Version |
|---|------|-------|---|---|---------|
| •   |      |       | 10.3.6.69   |   |         |
| TX Diversity Mode                                   | MD   |       | TX<br>Diversity<br>Mode<br>10.3.6.86  | Default value is the TX diversity mode currently used in all or part of the active set.   |         |
| DPC Mode  | OP   |       | Enumerate<br>d (Single<br>TPC, TPC<br>triplet in<br>soft)                         | "Single TPC" is<br>DPC_Mode=0 and<br>"TPC triplet in soft" is<br>DPC_mode=1 in [29].  | REL-5   |
| Serving HS-DSCH cell information                    | OP   |       | Serving<br>HS-DSCH<br>cell<br>information<br>10.3.6.74a                           |   | REL-6   |
| E-DCH reconfiguration information                   | OP   |       | E-DCH<br>reconfigura<br>tion<br>information<br>10.3.6.69a                         |   | REL-6   |
| UL 16QAM configuration                              | OP   |       | UL 16QAM<br>configurati<br>on<br>10.3.6.860                                       |   | REL-7   |
| E-DCH reconfiguration information same serving cell | OP   |       | E-DCH<br>reconfigura<br>tion<br>information<br>same<br>serving cell<br>10.3.6.69b | This IE is not present if<br>the serving E-DCH cell<br>is changed with this<br>message.   | REL-7   |
| E-TFC Boost Info                                    | OP   |       | E-TFC<br>Boost Info<br>10.3.6.106   | Absence of this IE means that boosting of E-DPCCH is disabled   | REL-7   |
| E-DPDCH power interpolation                         | OP   |       | Boolean   | True means E-DPDCH power interpolation formula is used, False means E-DPDCH power extrapolation formula is used for the computation of the gain factor $\beta_{ed}$ according to [29] | REL-7   |

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## 10.2.2 ACTIVE SET UPDATE COMPLETE

NOTE: For FDD only.

This message is sent by UE when active set update has been completed.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group name | Need | Multi | Type and reference               | Semantics description |
|--------------------------------|------|-------|----------------------------------|-----------------------|
| Message Type                   | MP   |       | Message<br>Type                  |                       |
| UE information elements        |      |       |                                  |                       |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier |                       |

| Information Element/Group | Need | Multi | Type and   | Semantics description |
|---------------------------|------|-------|------------|-----------------------|
| name                      |      |       | reference  |                       |
|                           |      |       | 10.3.3.36  |                       |
| Integrity check info      | CH   |       | Integrity  |                       |
|                           |      |       | check info |                       |
|                           |      |       | 10.3.3.16  |                       |

#### 10.2.3 ACTIVE SET UPDATE FAILURE

NOTE: Only for FDD.

This message is sent by UE if the update of the active set has failed, e.g. because the radio link is not a part of the active set.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| Message Type                   | MP   |       | Message<br>Type   |                       |
| UE information elements        |      |       |   |                       |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36             |                       |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16                      |                       |
| Failure cause                  | MP   |       | Failure<br>cause and<br>error<br>information<br>10.3.3.14 |                       |

#### 10.2.4 ASSISTANCE DATA DELIVERY

This message is sent by UTRAN to convey UE positioning assistance data to the UE.

RLC-SAP: AM

Logical channel: DCCH
Direction: UTRAN→UE

| Information Element/Group name   | Need | Multi | Type and reference                            | Semantics description | Version |
|----------------------------------|------|-------|---|-----------------------|---------|
| Message Type                     | MP   |       | Message<br>Type                               |                       |         |
| UE information elements          |      |       |   |                       |         |
| RRC transaction identifier       | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36 |                       |         |
| Integrity check info             | СН   |       | Integrity<br>check info<br>10.3.3.16          |                       |         |
| Measurement Information elements |      |       |   |                       |         |

| Information Element/Group name                    | Need | Multi | Type and reference   | Semantics description | Version |
|---|------|-------|--|-----------------------|---------|
| UE positioning OTDOA assistance data for UE-based | OP   |       | UE positioning OTDOA assistance data for UE-based 10.3.7.103a  |                       |         |
| UE positioning GPS assistance data                | OP   |       | UE positioning GPS assistance data 10.3.7.90                   |                       |         |
| UE positioning GANSS assistance data              | OP   |       | UE<br>positioning<br>GANSS<br>assistance<br>data<br>10.3.7.90b |                       | REL-7   |

## 10.2.5 CELL CHANGE ORDER FROM UTRAN

This message is used to order a cell change from UTRA to another radio access technology, e.g., GSM.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

| Information<br>Element/Group name  | Need | Multi                                   | Type and reference  | Semantics description   | Version |
|------------------------------------|------|---|---|---|---------|
| Message Type                       | MP   |   | Message Type  |   |         |
| UE information elements            |      |   | -   |   |         |
| RRC transaction identifier         | MP   |   | RRC<br>transaction<br>identifier<br>10.3.3.36                   |   |         |
| Integrity check info               | СН   |   | Integrity check info 10.3.3.16                                  |   |         |
| Activation time                    | MD   |   | Activation time 10.3.3.1  | Default value is "now"  |         |
| RB Information elements            |      |   |   |   |         |
| RAB information list               | OP   | 1 to<br><maxra<br>Bsetup&gt;</maxra<br> |   | This IE should not be included in this version of the protocol. |         |
| >RAB info                          | MP   |   | RAB info<br>10.3.4.8  |   |         |
| Other information                  |      |   |   |   |         |
| elements                           |      |   |   |   |         |
| Target cell description            | MP   |   |   |   |         |
| >CHOICE Radio Access<br>Technology | MP   |   |   | Two spare values are needed.                                    |         |
| >>GSM                              |      |   |   |   |         |
| >>>BSIC                            | MP   |   | BSIC 10.3.8.2   |   |         |
| >>>Band Indicator                  | MP   |   | Enumerated<br>(DCS 1800<br>band used,<br>PCS 1900<br>band used) | Indicates how to interpret the BCCH ARFCN                       |         |
| >>>BCCH ARFCN                      | MP   |   | Integer   | [45]  |         |

| Information<br>Element/Group name | Need | Multi | Type and reference                          | Semantics description   | Version |
|-----------------------------------|------|-------|---|---|---------|
|                                   |      |       | (01023)                                     |   |         |
| >>>NC mode                        | OP   |       | Bit string(3)                               | Includes bits b1-b3 of the NC mode IE specified in [43]. b1 is the least significant bit.  NOTE: The Bit string should be extended to 4 bits in a later version of the message. |         |
| >>>CHOICE GERAN System Info type  | OP   |       |   |   | REL-5   |
| >>>SI                             |      |       | GERAN<br>system<br>information<br>10.3.8.4f | See [44]  | REL-5   |
| >>>PSI                            |      |       | GERAN<br>system<br>information<br>10.3.8.4f | See [44]  | REL-5   |
| >>IS-2000                         |      |       |   |   |         |

#### 10.2.6 CELL CHANGE ORDER FROM UTRAN FAILURE

This message is sent on the RRC connection used before the Cell change order from UTRAN was executed. The message indicates that the UE has failed to seize the new channel in the other radio access technology.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group name | Need | Multi | Type and reference                            | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| Message Type                   | MP   |       | Message<br>Type                               |                       |
| UE information elements        |      |       |   |                       |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36 |                       |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16          |                       |
| Other information elements     |      |       |   |                       |
| Inter-RAT change failure       | MP   |       | Inter-RAT<br>change<br>failure<br>10.3.8.5    |                       |

### 10.2.7 CELL UPDATE

This message is used by the UE to initiate a cell update procedure.

RLC-SAP: TM

Logical channel: CCCH

Direction: UE→UTRAN

| Information<br>Element/Group name              | Need           | Multi   | Type and reference  | Semantics description  | Version |
|--|----------------|---|---|--|---------|
| Message Type                                   | MP             |   | Message<br>Type   |  |         |
| UE information elements                        |                |   | Турс  |  |         |
| U-RNTI   | MP             |   | U-RNTI<br>10.3.3.47   |  |         |
| RRC transaction identifier                     | CV-<br>Failure |   | RRC<br>transactio<br>n<br>identifier<br>10.3.3.36             |  |         |
| Integrity check info                           | CH             |   | Integrity<br>check info<br>10.3.3.16                          |  |         |
| START list                                     | MP             | 1 to<br><maxcn<br>domains<br/>&gt;</maxcn<br> |   | START [40] values for all CN domains.  |         |
| >CN domain identity                            | MP             |   | CN<br>domain<br>identity<br>10.3.1.1                          |  |         |
| >START   | MP             |   | START<br>10.3.3.38  | START value to be used in this CN domain.  |         |
| AM_RLC error<br>indication(RB2, RB3 or<br>RB4) | MP             |   | Boolean   | TRUE indicates AM_RLC unrecoverable error [16] occurred on RB2, RB3 or RB4 in the UE   |         |
| AM_RLC error indication(RB>4)                  | MP             |   | Boolean   | TRUE indicates AM_RLC unrecoverable error [16] occurred on RB>4 in the UE  |         |
| Cell update cause                              | MP             |   | Cell<br>update<br>cause<br>10.3.3.3                           |  |         |
| Traffic volume indicator                       | OP             |   | Enumerat<br>ed<br>(true)                                      | This IE shall be set to TRUE when the criteria for event based traffic volume measurement reporting is fulfilled. Absence of this element means not fulfilled. | REL-6   |
| Failure cause                                  | OP             |   | Failure<br>cause<br>and error<br>informatio<br>n<br>10.3.3.14 | sand not raining.  |         |
| RB timer indicator                             | MP             |   | RB timer indicator 10.3.3.28                                  |  |         |

| Information<br>Element/Group name                         | Need                            | Multi | Type and reference                                      | Semantics description  | Version |
|---|---------------------------------|-------|---|--|---------|
| Establishment cause                                       | OP                              |       | Establish<br>ment<br>cause<br>10.3.3.11                 |  | REL-5   |
| CS Call Type  | CV-<br>Convers<br>ationalC<br>S |       | Enumerat<br>ed<br>(speech,<br>video,<br>other)          | One spare value is needed  | REL-7   |
| HS-PDSCH in<br>CELL_FACH                                  | OP                              |       | Enumerat<br>ed<br>(TRUE)                                | The absence of this IE indicates that the UE does not support HS-PDSCH reception in CELL_FACH state.   | REL-7   |
| UE Mobility State<br>Indicator                            | MD                              |       | Enumerat<br>ed (High-<br>mobilityD<br>etected)          | Absence of this IE implies that, according to [4] either the High mobility state is not applicable or it has not been detected by the UE                       | REL-7   |
| Capability change indicator                               | OP                              |       | Enumerat<br>ed<br>(TRUE)                                | TRUE indicates that the UE capability has changed compared to the value stored in the variable UE_CAPABILITY_TRA NSFERRED                                      | REL-7   |
| Reconfiguration Status<br>Indicator                       | OP                              |       | Enumerat<br>ed<br>(true)                                | TRUE indicates a reconfiguration procedure is ongoing within the UE or a response message has been submitted to RLC and the UE is waiting for the layer 2 ACK. | REL-6   |
| MBMS Selected Services                                    | OP                              |       | MBMS<br>Selected<br>Services<br>Short<br>10.3.9a.7<br>d |  | REL-6   |
| Support for Two DRX<br>schemes in URA_PCH<br>and CELL_PCH | OP                              |       | Enumerat<br>ed<br>(TRUE)                                | The absence of this IE indicates that the UE does not support Two DRX schemes in URA_PCH and CELL_PCH  | REL-7   |
| Measurement   |                                 |       |   |  |         |
| information elements  Measured results on RACH            | OP                              |       | Measured<br>results on<br>RACH<br>10.3.7.45             |  |         |

| Condition        | Explanation   |
|------------------|---|
| Failure          | This IE is mandatory present if the IE "Failure cause"  |
|                  | is present and not needed otherwise.  |
| ConversationalCS | This IE is mandatory present if the IE "Establishment cause" has the value "Originating Conversational Call" or "EmergencyCall" and a CS call is being initiated. Otherwise it is not needed. |

## 10.2.8 CELL UPDATE CONFIRM

This message confirms the cell update procedure and can be used to reallocate new RNTI information for the UE valid in the new cell.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

| Information Element/Group name | Need      | Multi | Type and reference       | Semantics description          | Version |
|--------------------------------|-----------|-------|--------------------------|--------------------------------|---------|
| Message Type                   | MP        |       | Message                  |                                |         |
|                                |           |       | Туре                     |                                |         |
| UE Information Elements        | 0)/ 000// |       | II DAIT!                 |                                |         |
| U-RNTI                         | CV-CCCH   |       | U-RNTI                   |                                |         |
| RRC transaction identifier     | MD        |       | 10.3.3.47<br>RRC         |                                |         |
| RRC transaction identifier     | MP        |       | transaction              |                                |         |
|                                |           |       | identifier               |                                |         |
|                                |           |       | 10.3.3.36                |                                |         |
| Integrity check info           | CH        |       | Integrity                |                                |         |
| 3 9 1                          |           |       | check info               |                                |         |
|                                |           |       | 10.3.3.16                |                                |         |
| Integrity protection mode info | OP        |       | Integrity                | The UTRAN                      |         |
|                                |           |       | protection               | should not include             |         |
|                                |           |       | mode info                | this IE unless it is           |         |
|                                |           |       | 10.3.3.19                | performing an                  |         |
|                                |           |       |                          | SRNS relocation                |         |
|                                |           |       |                          | or a cell                      |         |
|                                |           |       |                          | reselection from               |         |
| Ciphering mode info            | OP        |       | Ciphering                | GERAN <i>Iu mode</i> The UTRAN |         |
| Cipriening mode into           | OF        |       | mode info                | should not include             |         |
|                                |           |       | 10.3.3.5                 | this IE unless it is           |         |
|                                |           |       | 10.0.0.0                 | performing either              |         |
|                                |           |       |                          | an SRNS                        |         |
|                                |           |       |                          | relocation or a cell           |         |
|                                |           |       |                          | reselection from               |         |
|                                |           |       |                          | GERAN lu mode,                 |         |
|                                |           |       |                          | and a change in                |         |
|                                |           |       |                          | ciphering                      |         |
|                                |           |       |                          | algorithm.                     |         |
| Activation time                | MD        |       | Activation               | Default value is               |         |
| N. H. DNITI                    | 0.0       |       | time 10.3.3.1            | "now"                          |         |
| New U-RNTI                     | OP        |       | U-RNTI                   |                                |         |
| New C-RNTI                     | OP        |       | 10.3.3.47<br>C-RNTI      |                                |         |
| New C-RIVII                    | OF        |       | 10.3.3.8                 |                                |         |
| New DSCH-RNTI                  | OP        |       | DSCH-RNTI                | Should not be set              |         |
|                                | •         |       | 10.3.3.9a                | in FDD. If                     |         |
|                                |           |       |                          | received, the UE               |         |
|                                |           |       |                          | should ignore it               |         |
| New H-RNTI                     | OP        |       | H-RNTI                   |                                | REL-5   |
|                                |           |       | 10.3.3.14a               |                                |         |
| New Primary E-RNTI             | OP        |       | E-RNTI                   |                                | REL-6   |
|                                |           |       | 10.3.3.10a               |                                |         |
| New Secondary E-RNTI           | OP        |       | E-RNTI                   | FDD only                       | REL-6   |
|                                | 1         |       | 10.3.3.10a               |                                |         |
| RRC State Indicator            | MP        |       | RRC State                |                                |         |
|                                |           |       | Indicator                |                                |         |
| LITEAN DDV avalada a sala      | OD        |       | 10.3.3.35a               |                                |         |
| UTRAN DRX cycle length         | OP        |       | UTRAN DRX                |                                |         |
| coefficient                    |           |       | cycle length coefficient |                                |         |
|                                |           |       | 10.3.3.49                |                                |         |
|                                |           |       | 10.3.3.49                | l                              |         |

| Information Element/Group name                          | Need  | Multi   | Type and reference   | Semantics description  | Version |
|---|-------|---|--|--|---------|
| Wait time   | OP    |   | Wait time<br>10.3.3.50                                     |  |         |
| RLC re-establish indicator (RB2, RB3 and RB4)           | MP    |   | RLC re-<br>establish<br>indicator<br>10.3.3.35             | Should not be set<br>to TRUE if IE<br>"Downlink counter<br>synchronisation<br>info" is included in<br>message. |         |
| RLC re-establish indicator (RB5 and upwards)            | MP    |   | RLC re-<br>establish<br>indicator<br>10.3.3.35             | Should not be set to TRUE if IE "Downlink counter synchronisation info" is included in message.                |         |
| CN Information Elements                                 |       |   |  |  |         |
| CN Information info                                     | OP    |   | CN<br>Information<br>info 10.3.1.3                         |  |         |
| UTRAN Information Elements                              |       |   |  |  |         |
| URA identity  | OP    |   | URA identity<br>10.3.2.6                                   |  |         |
| RNC support for change of UE capability                 | OP    |   | Boolean  | Should be included if the message is used to perform an SRNS relocation  | REL-7   |
| RB information elements  RB information to release list | OP    | 1 to  |  |  |         |
| RB initionnation to release list                        | OP    | <maxrb></maxrb>   |  |  |         |
| >RB information to release                              | MP    |   | RB information to release 10.3.4.19                        |  |         |
| RB information to reconfigure list                      | OP    | 1 to<br><maxrb></maxrb>                                       |  |  |         |
| >RB information to reconfigure                          | MP    |   | RB information to reconfigure 10.3.4.18                    |  |         |
| RB information to be affected list                      | OP    | 1 to<br><maxrb></maxrb>                                       | 10.0.110   |  |         |
| >RB information to be affected                          | MP    |   | RB information to be affected 10.3.4.17                    |  |         |
| Downlink counter  | OP    |   |  |  |         |
| synchronisation info >RB with PDCP information list     | ОР    | 1 to <maxrball< td=""><td></td><td></td><td></td></maxrball<> |  |  |         |
| >>RB with PDCP information                              | MP    | RABs>   | RB with<br>PDCP<br>information<br>10.3.4.22                | This IE is needed<br>for each RB<br>having PDCP in<br>the case of<br>lossless SRNS<br>relocation               |         |
|   | OP    |   |  |  | REL-5   |
| >>PDCP POHC target mode                                 | OP OP |   | PDCP<br>context<br>relocation<br>info<br>10.3.4.1a<br>PDCP | This IE is needed<br>for each RB<br>having PDCP and<br>performing PDCP<br>context relocation                   | REL-5   |
| PDCP ROHC target mode                                   | l OF  |   | 1 5005   | 1  | C-13    |

| Information Element/Group name                                     | Need | Multi                                 | Type and reference   | Semantics description                        | Version |
|--|------|---------------------------------------|--|--|---------|
|  |      |                                       | ROHC target<br>mode<br>10.3.4.2a   |  |         |
| TrCH Information Elements  |      |                                       |  |  |         |
| Uplink transport channels  |      |                                       |  |  |         |
| UL Transport channel information common for all transport channels | OP   |                                       | UL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.24 |  |         |
| Deleted TrCH information list                                      | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |  |  |         |
| >Deleted UL TrCH information                                       | MP   |                                       | Deleted UL<br>TrCH<br>information<br>10.3.5.5  |  |         |
| Added or Reconfigured TrCH information list                        | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |  |  |         |
| >Added or Reconfigured UL<br>TrCH information                      | MP   |                                       | Added or<br>Reconfigure<br>d UL TrCH<br>information<br>10.3.5.2                                |  |         |
| Downlink transport channels  |      |                                       |  |  |         |
| DL Transport channel information common for all transport channels | OP   |                                       | DL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.6  |  |         |
| Deleted TrCH information list                                      | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |  |  |         |
| >Deleted DL TrCH information                                       | MP   |                                       | Deleted DL<br>TrCH<br>information<br>10.3.5.4  |  |         |
| Added or Reconfigured TrCH information list                        | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |  |  |         |
| >Added or Reconfigured DL<br>TrCH information                      | MP   |                                       | Added or<br>Reconfigure<br>d DL TrCH<br>information<br>10.3.5.1                                |  |         |
| PhyCH information elements   |      |                                       |  |  |         |
| Frequency info   | OP   |                                       | Frequency<br>info<br>10.3.6.36   |  |         |
| Multi-frequency Info   | OP   |                                       | Multi-<br>frequency<br>Info<br>10.3.6.39a  | This IE is used for<br>1.28 Mcps TDD<br>only | REL-7   |

| Information Element/Group name                  | Need | Multi                   | Type and reference   | Semantics description                                      | Version |
|---|------|-------------------------|--|--|---------|
| DTX-DRX timing information                      | OP   |                         | DTX-DRX<br>timing<br>information<br>10.3.6.34b                 |  | REL-7   |
| DTX-DRX Information                             | OP   |                         | DTX-DRX<br>Information<br>10.3.6.34a                           |  | REL-7   |
| HS-SCCH less Information                        | OP   |                         | HS-SCCH<br>less<br>Information<br>10.3.6.36ab                  |  | REL-7   |
| MIMO parameters                                 | OP   |                         | MIMO<br>parameters<br>10.3.6.41a                               |  | REL-7   |
| Uplink radio resources                          |      |                         |  |  |         |
| Maximum allowed UL TX power                     | MD   |                         | Maximum<br>allowed UL<br>TX power<br>10.3.6.39                 | Default value is<br>the existing<br>maximum UL TX<br>power |         |
| Uplink DPCH info                                | OP   |                         | Uplink<br>DPCH info<br>10.3.6.88                               |  |         |
| E-DCH Info                                      | OP   |                         | E-DCH Info<br>10.3.6.97  |  | REL-6   |
| Downlink radio resources                        |      |                         |  |  |         |
| Downlink HS-PDSCH<br>Information                | OP   |                         | Downlink<br>HS_PDSCH<br>Information<br>10.3.6.23a              |  | REL-5   |
| Downlink information common for all radio links | OP   |                         | Downlink information common for all radio links 10.3.6.24      |  |         |
| Downlink information per radio link list        | OP   | 1 to<br><maxrl></maxrl> |  | Send downlink information for each radio link to be set-up |         |
| >Downlink information for each radio link       | MP   |                         | Downlink<br>information<br>for each<br>radio link<br>10.3.6.27 |  |         |
| MBMS PL Service Restriction Information         | OP   |                         | Enumerated (TRUE)  |  | REL-6   |

| Condition | Explanation   |  |  |
|-----------|---|--|--|
| CCCH      | This IE is mandatory present when CCCH is used and  |  |  |
|           | ciphering is not required and not needed otherwise. |  |  |

### 10.2.9 COUNTER CHECK

This message is used by the UTRAN to indicate the current COUNT-C MSB values associated to each radio bearer utilising UM or AM RLC mode and to request the UE to compare these to its COUNT-C MSB values and to report the comparison results to UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

| Information Element/Group   | Presence | Multi                        | IE type and reference                          | Semantics description  |
|-----------------------------|----------|------------------------------|--|--|
| name                        |          |                              | reference                                      |  |
| Message Type                | MP       |                              |  |  |
| UE information elements     |          |                              |  |  |
| RRC transaction identifier  | MP       |                              | RRC<br>transaction<br>identifier<br>10.3.3.36  |  |
| Integrity check info        | CH       |                              | Integrity<br>check info<br>10.3.3.16           |  |
| RB information elements     |          |                              |  |  |
| RB COUNT-C MSB information  | MP       | 1 to <<br>maxRBallR<br>ABs > |  | For each RB (excluding signalling radio bearers) using UM or AM RLC. |
| >RB COUNT-C MSB information | MP       |                              | RB COUNT-<br>C MSB<br>information<br>10.3.4.14 |  |

### 10.2.10 COUNTER CHECK RESPONSE

This message is used by the UE to respond to a COUNTER CHECK message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group  | Presence | Multi                        | IE type and                                | Semantics description |
|----------------------------|----------|------------------------------|--|-----------------------|
| name                       |          |                              | reference                                  |                       |
| Message Type               | MP       |                              |  |                       |
| UE information elements    |          |                              |  |                       |
| RRC transaction identifier | MP       |                              | RRC<br>transaction                         |                       |
|                            |          |                              | identifier<br>10.3.3.36                    |                       |
| Integrity check info       | СН       |                              | Integrity<br>check info<br>10.3.3.16       |                       |
| RB information elements    |          |                              |  |                       |
| RB COUNT-C information     | OP       | 1 to <<br>maxRBallR<br>ABs > |  |                       |
| >RB COUNT-C information    | MP       |                              | RB COUNT-<br>C<br>information<br>10.3.4.15 |                       |

## 10.2.11 DOWNLINK DIRECT TRANSFER

This message is sent by UTRAN to transfer higher layer messages.

RLC-SAP: AM

Logical channel: DCCH
Direction: UTRAN -> UE

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Message Type                   | MP   |       | Message<br>Type    |                       |

| Information Element/Group name | Need | Multi | Type and reference                            | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| UE information elements        |      |       |   |                       |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36 |                       |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16          |                       |
| CN information elements        |      |       |   |                       |
| CN Domain Identity             | MP   |       | Core Network Domain Identity 10.3.1.1         |                       |
| NAS message                    | MP   |       | NAS<br>message<br>10.3.1.8                    |                       |

10.2.12 Void

10.2.13 Void

10.2.14 Void

## 10.2.15 HANDOVER FROM UTRAN COMMAND

This message is used for handover from UMTS to another system e.g. GSM. One or several messages from the other system can be included in the Inter-RAT message information element in this message. These messages are structured and coded according to that systems specification.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

| Information Element/Group name | Need | Multi | Type and reference                                | Semantics description  | Version |
|--------------------------------|------|-------|---|------------------------|---------|
| Message Type                   | MP   |       | Message<br>Type                                   |                        |         |
| UE information elements        |      |       |   |                        |         |
| RRC transaction identifier     | MP   |       | RRC<br>transactio<br>n<br>identifier<br>10.3.3.36 |                        |         |
| Integrity check info           | CH   |       | Integrity<br>check info<br>10.3.3.16              |                        |         |
| Activation time                | MD   |       | Activation time 10.3.3.1                          | Default value is "now" |         |
| RB information elements        |      |       |   |                        |         |

| Information<br>Element/Group name | Need | Multi  | Type and reference   | Semantics description  | Version |
|-----------------------------------|------|--|--|--|---------|
| RAB information list              | OP   | 1 to<br><maxra<br>Bsetup&gt;</maxra<br>              |  | For each RAB to be handed over. In handover to GERAN <i>Iu mode</i> the RAB information is included in the GERAN Iu message below.                                   |         |
| >RAB info                         | MP   |  | RAB info<br>10.3.4.8   |  |         |
| Other information elements        |      |  |  |  |         |
| CHOICE System type                | MP   |  |  | This IE indicates which specification to apply, to decode the transported messages   |         |
| >GSM                              |      |  |  |  |         |
| >>Frequency band                  | MP   |  | Enumerat<br>ed<br>(GSM/DC<br>S 1800<br>band<br>used),<br>GSM/PC<br>S 1900<br>band<br>used) |  |         |
| >>GSM message                     |      |  | D':  |  |         |
| >>>Single GSM<br>message          | MP   |  | Bit string<br>(no<br>explicit<br>size<br>constraint  | Formatted and coded according to GSM specifications The first/leftmost/most significant bit of the bit string contains bit 8 of the first octet of the GSM message.  |         |
| >>>GSM message List               | MP   | 1.to. <ma<br>xInterSy<br/>sMessa<br/>ges&gt;</ma<br> | Bit string<br>(1512)   | Formatted and coded according to GSM specifications. The first/leftmost/most significant bit of the bit string contains bit 8 of the first octet of the GSM message. |         |
| >>CHOICE GERAN System Info type   | OP   |  |  |  | REL-6   |
| >>>SI                             |      |  | GERAN<br>system<br>informatio<br>n<br>10.3.8.4f  | See [44]   | REL-6   |
| >>>PSI                            |      |  | GERAN<br>system<br>informatio<br>n<br>10.3.8.4f  | See [44]   | REL-6   |

| Information<br>Element/Group name | Need | Multi   | Type and reference  | Semantics description  | Version |
|-----------------------------------|------|---|---|--|---------|
| >GERAN lu                         |      |   | reference   |  | REL-5   |
| >>Frequency band                  | MP   |   | Enumerat<br>ed  |  | REL-5   |
|                                   |      |   | (GSM/DC<br>S 1800<br>band<br>used),<br>GSM/PC<br>S 1900<br>band |  |         |
|                                   |      |   | used)   |  |         |
| >>GERAN lu message                |      |   | 4664)   |  | REL-5   |
| >>>Single GERAN lu<br>message     | MP   |   | Bit string<br>(no<br>explicit<br>size<br>constraint             | Formatted and coded according to [53]. The first/leftmost/most significant bit of the bit string contains bit 8 of the first octet of the message.   | REL-5   |
| >>>GERAN lu message<br>List       | MP   | 1 to<br><maxint<br>erSysMe<br/>ssages&gt;</maxint<br> | Bit string (132768)   | Formatted and coded according to [53]. The first/leftmost/most significant bit of the bit string contains bit 8 of the first octet of the message.   | REL-5   |
| >cdma2000                         |      |   |   |  |         |
| >>cdma2000MessageLis<br>t         | MP   | 1.to. <ma<br>xInterSy<br/>sMessa<br/>ges&gt;</ma<br>  |   |  |         |
| >>>MSG_TYPE(s)                    | MP   |   | Bit string (8)  | Formatted and coded according to cdma2000 specifications. The MSG_TYPE bits are numbered b0 to b7. The first/leftmost/most significant bit of the bit string contains bit 7 of the MSG_TYPE. |         |
| >>>cdma2000Messagep<br>ayload(s)  | MP   |   | Bit string<br>(1512)  | Formatted and coded according to cdma2000 specifications. The first/leftmost/most significant bit of the bit string contains the bit 7 of the first octet of the cdma2000 message.           |         |

## 10.2.16 HANDOVER FROM UTRAN FAILURE

This message is sent on the RRC connection used before the Inter-RAT Handover was executed. The message indicates that the UE has failed to seize the new channel in the other system.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| Message Type                   | MP   |       | Message<br>Type    |                       |         |

| Information<br>Element/Group name | Need | Multi   | Type and reference                           | Semantics description  | Version |
|-----------------------------------|------|---|--|--|---------|
| UE information elements           |      |   | 10.0.0.0.0                                   |  |         |
| RRC transaction identifier        | MP   |   | RRC<br>transactio<br>n<br>identifier         |  |         |
| Integrity check info              | CH   |   | Integrity check info                         |  |         |
| Other information elements        |      |   | 10.0.0.10                                    |  |         |
| Inter-RAT handover failure        | OP   |   | Inter-RAT<br>handover<br>failure<br>10.3.8.6 |  |         |
| CHOICE System type                | OP   |   |  | This IE indicates which specification to apply to decode the transported messages  |         |
| >GSM                              |      |   |  |  |         |
| >>GSM message List                | MP   | 1.to. <ma<br>xInterSy<br/>sMessa<br/>ges&gt;</ma<br>  | Bit string (1512)                            | Formatted and coded according to GSM specifications. The first/leftmost/most significant bit of the bit string contains bit 8 of the first octet of the GSM message.                         |         |
| >GERAN lu                         |      |   |  |  | REL-5   |
| >>GERAN lu message<br>List        | MP   | 1 to<br><maxint<br>erSysMe<br/>ssages&gt;</maxint<br> | Bit string (132768)                          | Formatted and coded according to [53]. The first/leftmost/most significant bit of the bit string contains bit 8 of the first octet of the message.   | REL-5   |
| >cdma2000                         |      |   |  |  |         |
| >>cdma2000MessageLis<br>t         | MP   | 1.to. <ma<br>xInterSy<br/>sMessa<br/>ges&gt;</ma<br>  |  |  |         |
| >>>MSG_TYPE(s)                    | MP   |   | Bit string (8)                               | Formatted and coded according to cdma2000 specifications. The MSG_TYPE bits are numbered b0 to b7. The first/leftmost/most significant bit of the bit string contains bit 7 of the MSG_TYPE. |         |
| >>>cdma2000Messagep<br>ayload(s)  | MP   |   | Bit string<br>(1512)                         | Formatted and coded according to cdma2000 specifications. The first/leftmost/most significant bit of the bit string contains bit 7 of the first octet of the cdma2000 message.               |         |

# 10.2.16a HANDOVER TO UTRAN COMMAND

This message is sent to the UE via other system to make a handover to UTRAN.

RLC-SAP: N/A (Sent through a different RAT)

Logical channel: N/A (Sent through a different RAT)

| Information                | Need | Multi   | Type and               | Semantics    | Version |
|----------------------------|------|---|------------------------|--------------|---------|
| Element/Group name         | MD   |   | reference              | description  |         |
| New U-RNTI                 | MP   |   | U-RNTI                 |              |         |
|                            |      |   | Short<br>10.3.3.48     |              |         |
| Ciphering algorithm        | OP   |   | Ciphering              |              |         |
| Cipriering algorithm       | Oi   |   | algorithm              |              |         |
|                            |      |   | 10.3.3.4               |              |         |
| RNC support for change of  | MP   |   | Boolean                |              | REL-7   |
| UE capability              |      |   |                        |              |         |
| New H-RNTI                 | OP   |   | H-RNTI                 |              | REL-6   |
|                            |      |   | 10.3.3.14a             |              |         |
| New Primary E-RNTI         | OP   |   | E-RNTI                 |              | REL-6   |
| Nav. Carandam E DNTI       | 00   |   | 10.3.3.10a             | EDD          | DELO    |
| New Secondary E-RNTI       | OP   |   | E-RNTI<br>10.3.3.10a   | FDD only     | REL-6   |
| CHOICE specification       | MP   |   | 10.3.3.10a             |              |         |
| mode                       | IVIF |   |                        |              |         |
| >Complete specification    |      |   |                        |              |         |
| RB information elements    |      |   |                        |              |         |
| >>Signalling RB            | MP   | 1 to  |                        | For each     |         |
| information to setup list  |      | <maxsrbsetup></maxsrbsetup>   |                        | signalling   |         |
| ·                          |      | ·   |                        | radio bearer |         |
|                            |      |   |                        | established  |         |
| >>>Signalling RB           | MP   |   | Signalling             |              |         |
| information to setup       |      |   | RB                     |              |         |
|                            |      |   | information            |              |         |
|                            |      |   | to setup               |              |         |
| >>RAB information to       | OP   | 1 to  | 10.3.4.24              | For each RAB |         |
| setup list                 | OF   | <maxrabsetup></maxrabsetup>   |                        | established  |         |
| >>>RAB information for     | MP   | <maxi (doctup)<="" td="" v=""><td>RAB</td><td>Cotabilorica</td><td></td></maxi> | RAB                    | Cotabilorica |         |
| setup                      |      |   | information            |              |         |
|                            |      |   | for setup              |              |         |
|                            |      |   | <u>10.3.4.10</u>       |              |         |
| Uplink transport           |      |   |                        |              |         |
| channels                   |      |   | l                      |              |         |
| >>UL Transport channel     | MP   |   | UL                     |              |         |
| information common for all |      |   | Transport channel      |              |         |
| transport channels         |      |   | information            |              |         |
|                            |      |   | common for             |              |         |
|                            |      |   | all transport          |              |         |
|                            |      |   | channels               |              |         |
|                            |      |   | 10.3.5.24              |              |         |
| >>Added or Reconfigured    | MP   | 1 to <maxtrch></maxtrch>  |                        |              |         |
| TrCH information           | 1.15 |   |                        |              |         |
| >>>Added or Reconfigured   | MP   |   | Added or               |              |         |
| UL TrCH information        |      |   | Reconfigure            |              |         |
|                            |      |   | d UL TrCH information  |              |         |
|                            |      |   | 10.3.5.2               |              |         |
| Downlink transport         |      |   | 10.0.0.2               |              |         |
| channels                   |      |   |                        |              |         |
| >>DL Transport channel     | MP   |   | DL                     |              |         |
| information common for all |      |   | Transport              |              |         |
| transport channels         |      |   | channel                |              |         |
|                            |      |   | information            |              |         |
|                            |      |   | common for             |              |         |
|                            |      |   | all transport channels |              |         |
|                            |      |   | 10.3.5.6               |              |         |
|                            | 1    |   | 10.3.3.0               | 1            |         |

| Information<br>Element/Group name  | Need | Multi                    | Type and reference  | Semantics description   | Version |
|--|------|--------------------------|---|---|---------|
| >>Added or Reconfigured TrCH information                                     | MP   | 1 to <maxtrch></maxtrch> |   | •   |         |
| >>>Added or Reconfigured DL TrCH information                                 | MP   |                          | Added or<br>Reconfigure<br>d DL TrCH<br>information<br>10.3.5.1               |   |         |
| Uplink radio resources   |      |                          |   |   |         |
| >>Uplink DPCH info   | MP   |                          | Uplink<br>DPCH info<br>10.3.6.88  |   |         |
| >>E-DCH Info   | OP   |                          | E-DCH Info<br>10.3.6.97   |   | REL-6   |
| Downlink radio resources   |      |                          |   |   |         |
| >>Downlink HS-PDSCH<br>Information   | OP   |                          | Downlink<br>HS-PDSCH<br>Information<br>10.3.6.23a                             |   | REL-6   |
| >>Downlink information common for all radio links                            | MP   |                          | Downlink<br>information<br>common for<br>all radio links<br>10.3.6.24         |   |         |
| >>Downlink information per radio link  | MP   | 1 to <maxrl></maxrl>     |   |   |         |
| >>>Downlink information for each radio link                                  | MP   |                          | Downlink<br>information<br>for each<br>radio link<br>10.3.6.27                |   |         |
| >Preconfiguration  |      |                          |   |   |         |
| >>CHOICE Preconfiguration mode   | MP   |                          |   |   |         |
| >>>Predefined configuration  | MP   |                          | Predefined configuration identity 10.3.4.5                                    |   |         |
| >>>Default configuration   |      |                          |   |   |         |
| >>>Default configuration mode  | MP   |                          | Enumerated<br>(FDD, TDD)  | Indicates whether the FDD or TDD version of the default configuration shall be used |         |
| >>>Default configuration identity  | MP   |                          | Default<br>configuration<br>identity<br>10.3.4.0                              |   |         |
| >>RAB info   | OP   |                          | RAB info<br>Post<br>10.3.4.9  | One RAB is established  |         |
| >>Uplink DPCH info   | MP   |                          | Uplink<br>DPCH info<br>Post<br>10.3.6.89                                      |   |         |
| >>Downlink radio resources >>Downlink information common for all radio links | MP   |                          | Downlink<br>information<br>common for<br>all radio links<br>Post<br>10.3.6.25 |   |         |
| >>Downlink information per   | MP   | 1 to <maxrl></maxrl>     | 10.3.0.23   | Send  |         |
|  |      |                          | 1   |   |         |

| Information<br>Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|-----------------------------------|------|-------|--------------------|-----------------------|---------|
| radio link                        |      |       |                    | downlink              |         |
|                                   |      |       |                    | information           |         |
|                                   |      |       |                    | for each radio        |         |
|                                   |      |       |                    | link to be set-       |         |
|                                   |      |       |                    | up.<br>In TDD         |         |
|                                   |      |       |                    | MaxRL is 1.           |         |
| >>>Downlink information           | MP   |       | Downlink           | IVIAXRL IS 1.         |         |
| for each radio link               | IVII |       | information        |                       |         |
| Tor odon radio iiiik              |      |       | for each           |                       |         |
|                                   |      |       | radio link         |                       |         |
|                                   |      |       | Post               |                       |         |
|                                   |      |       | 10.3.6.28          |                       |         |
| >>CHOICE mode                     | MP   |       |                    |                       |         |
| >>>FDD                            |      |       |                    | (no data)             |         |
| >>>TDD                            |      |       |                    |                       |         |
| >>>>Primary CCPCH Tx              | MP   |       | Primary            |                       |         |
| Power                             |      |       | CCPCH Tx           |                       |         |
|                                   |      |       | Power              |                       |         |
|                                   | MD   |       | 10.3.6.59          |                       |         |
| Frequency info                    | MP   |       | Frequency          |                       |         |
|                                   |      |       | info<br>10.3.6.36  |                       |         |
| Multi-frequency Info              | OP   |       | Multi-             | This IE is            | REL-7   |
| Multi-frequency frito             | UP   |       | frequency          | used for 1.28         | KEL-7   |
|                                   |      |       | Info               | Mcps TDD              |         |
|                                   |      |       | 10.3.6.39a         | only                  |         |
| Maximum allowed UL TX             | MP   |       | Maximum            | Unity Chiny           |         |
| power                             |      |       | allowed UL         |                       |         |
| ,                                 |      |       | TX power           |                       |         |
|                                   |      |       | 10.3.6.39          |                       |         |

# 10.2.16b HANDOVER TO UTRAN COMPLETE

This message is sent by the UE when a handover to UTRAN has been completed.

RLC-SAP: AM

Logical channel: DCCH

| Information Element/Group name | Need | Multi                                      | Type and reference          | Semantics description                    |
|--------------------------------|------|--|-----------------------------|--|
| Message Type                   | MP   |  | Message<br>Type             |  |
| UE Information elements        |      |  |                             |  |
| START list                     | СН   | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br> |                             | START [40] values for all CN domains.    |
| >CN domain identity            | MP   |  | CN domain identity 10.3.1.1 |  |
| >START                         | MP   |  | START<br>10.3.3.38          |  |
| RB Information elements        |      |  |                             |  |
| COUNT-C activation time        | OP   |  | Activation time 10.3.3.1    | Used for radio bearers mapped on RLC-TM. |

# 10.2.16c INITIAL DIRECT TRANSFER

This message is used to initiate a signalling connection based on indication from the upper layers, and to transfer a NAS message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE -> UTRAN

| Information<br>Element/Group name | Need                            | Multi | Type and reference                             | Semantics description   | Version |
|-----------------------------------|---------------------------------|-------|--|---|---------|
| Message Type                      | MP                              |       | Message<br>Type                                |   |         |
| UE information elements           |                                 |       |  |   |         |
| Integrity check info              | СН                              |       | Integrity<br>check info<br>10.3.3.16           |   |         |
| PLMN identity                     | OP                              |       | PLMN<br>identity<br>10.3.1.11                  | This IE indicates the PLMN to which the UE requests the signalling connection to be established.  | REL-6   |
| CN information elements           |                                 |       |  |   |         |
| CN domain identity                | MP                              |       | CN<br>domain<br>identity<br>10.3.1.1           |   |         |
| Intra Domain NAS Node<br>Selector | MP                              |       | Intra Domain NAS Node Selector 10.3.1.6        |   |         |
| NAS message                       | MP                              |       | NAS<br>message<br>10.3.1.8                     |   |         |
| START                             | OP                              |       | START<br>10.3.3.38                             | START value to be used in the CN domain as indicated in the IE "CN domain identity". This IE shall always be present in this version of the protocol. |         |
| Establishment cause               | OP                              |       | Establish<br>ment<br>cause<br>10.3.3.11        |   | Rel-5   |
| CS Call Type                      | CV-<br>Convers<br>ationalC<br>S |       | Enumerat<br>ed<br>(speech,<br>video,<br>other) | One spare value is needed   | REL-7   |
| Measurement information elements  |                                 |       |  |   |         |
| Measured results on RACH          | OP                              |       | Measured<br>results on<br>RACH<br>10.3.7.45    |   |         |
| MBMS joined information           | OP                              |       |  |   | REL-6   |
| >P-TMSI                           | OP                              |       | P-TMSI<br>(GSM-<br>MAP)<br>10.3.1.13           |   | REL-6   |

| Condition        | Explanation  |
|------------------|--|
| ConversationalCS | This IE is mandatory present if the IE "Establishment  |
|                  | cause" has the value "Originating Conversational Call" |
|                  | or "EmergencyCall" and the IE "CN domain identity"     |
|                  | has the value "CS domain". Otherwise it is not         |
|                  | needed.  |

# 10.2.16d INTER RAT HANDOVER INFO

This message is sent by the UE via another radio access technology to provide information to the target RNC when preparing for a handover to UTRAN.

RLC-SAP: N/A (Sent through a different RAT)

Logical channel: N/A (Sent through a different RAT)

| Information              | Need   | Multi | Type and      | Semantics description    | Version  |
|--------------------------|--------|-------|---------------|--------------------------|----------|
| Element/Group Name       |        |       | reference     |                          |          |
| Radio Bearer IEs         |        |       | <b>-</b>      |                          |          |
| Predefined configuration | OP     |       | Predefined    |                          |          |
| status information       |        |       | configuration |                          |          |
|                          |        |       | status        |                          |          |
|                          |        |       | information   |                          |          |
|                          |        |       | 10.3.4.5a     |                          |          |
| Predefined configuration | OP     |       | Predefined    |                          | REL-5    |
| status information       |        |       | configuration |                          |          |
| compressed               |        |       | status        |                          |          |
|                          |        |       | information   |                          |          |
|                          |        |       | compressed    |                          |          |
| 11=1.6                   |        |       | 10.3.4.5b     |                          |          |
| UE Information elements  |        |       |               |                          |          |
| UE security information  | OP     |       | UE security   |                          |          |
| 22 coodiny information   | ``     |       | information   |                          |          |
|                          |        |       | 10.3.3.42b    |                          |          |
| UE security information2 | OP     |       | UE security   |                          | REL-6    |
| OL Gooding information2  |        |       | information2  |                          | I TELE O |
|                          |        |       | 10.3.3.42c    |                          |          |
| UE Specific Behaviour    | OP     |       | UE Specific   | This IE shall not be     |          |
| Information 1 interRAT   |        |       | Behaviour     | included in this version |          |
|                          |        |       | Information   | of the protocol          |          |
|                          |        |       | 1 interRAT    | о то ресовое             |          |
|                          |        |       | 10.3.3.52     |                          |          |
| UE capability container  | OP     |       |               |                          |          |
| >UE radio access         | MP     |       | UE radio      |                          |          |
| capability               |        |       | access        |                          |          |
|                          |        |       | capability    |                          |          |
|                          |        |       | 10.3.3.42     |                          |          |
| >UE radio access         | MP     |       | UE radio      | Although this IE is not  |          |
| capability extension     |        |       | access        | always required, the     |          |
|                          |        |       | capability    | need has been set to     |          |
|                          |        |       | extension     | MP to align with the     |          |
|                          |        |       | 10.3.3.42a    | ASN.1                    |          |
| UE radio access          | OP     |       | UE radio      |                          | REL-5    |
| capability compressed    |        |       | access        |                          |          |
|                          |        |       | capability    |                          |          |
|                          |        |       | compressed    |                          |          |
|                          |        |       | 10.3.3.420    |                          |          |
| UE radio access          | CV-Fdd |       | UE radio      |                          | REL-6    |
| capability comp 2        |        |       | access        |                          |          |
|                          |        |       | capability    |                          |          |
|                          |        |       | comp 2        |                          |          |
|                          |        |       | 10.3.3.42oa   |                          |          |

| Condition | Explanation   |  |  |
|-----------|---|--|--|
| Fdd       | This IE is mandatory present for FDD, otherwise it is |  |  |
|           | not needed.   |  |  |

## 10.2.16e MBMS ACCESS INFORMATION

This message is transmitted periodically by UTRAN to inform UEs that have joined or selected a particular MBMS service about the need to establish an RRC connection or to perform a cell update. While the message contents may change within a modification period, all occurances of the information within a modification period concern the same MBMS service(s). If the cell on which this message is sent is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this message would not have been received.

RLC-SAP: UM

Logical channel: MCCH

Direction: UTRAN  $\rightarrow$  UE

| Information                               | Need | Multi   | Type and  | Semantics description  | Version |
|---|------|---|---|--|---------|
| Element/Group name                        |      |   | reference   |  |         |
| Message type                              | MP   |   | Message<br>Type   |  | REL-6   |
| Service list                              | MP   | 1 to<br><maxmb<br>MSserv<br/>Count&gt;</maxmb<br> | .,,,,,  |  | REL-6   |
| >MBMS short<br>transmission ID            | MP   |   | MBMS<br>Short<br>transmissi<br>on identity<br>10.3.9a.1 | Reference/ index to a<br>transmission listed in the MBMS<br>MODIFIED SERVICES<br>INFORMATION or MBMS<br>UNMODIFIED SERVICES<br>INFORMATION   | REL-6   |
| >Access probability factor - Idle         | MP   |   | Integer (0<br>to 960 by<br>step of<br>32, 1000)         | Access probability factor for UEs in idle mode. The actual Access Probability (AP) is a function of the Access Probability Factor (APF):  AP (APF) = 2 <sup>-(APF/100)</sup>   | REL-6   |
| >Access probability<br>factor – connected | MD   |   | Integer (0<br>to 960 by<br>step of<br>32, 1000)         | Access probability factor for UEs in connected mode. The actual Access Probability (AP) is a function of the Access Probability Factor (APF):  AP (APF) = 2 <sup>-(APF/100)</sup> Default value is the value included in IE "Access probability factor - Idle" | REL-6   |
| >Connected mode counting scope            | MP   |   |   |  | REL-6   |
| >>URA_PCH                                 | MP   |   | BOOLEA<br>N   | TRUE means that UEs in URA_PCH state shall participate in counting   | REL-6   |
| >>CELL_PCH                                | MP   |   | BOOLEA<br>N   | TRUE means that UEs in CELL_PCH state shall participate in counting  | REL-6   |
| >> CELL_FACH                              | MP   |   | BOOLEA<br>N   | TRUE means that UEs in CELL_FACH state shall participate in counting   | REL-6   |

#### 10.2.16f MBMS COMMON P-T-M RB INFORMATION

This message is transmitted periodically by UTRAN to inform UEs about the p-t-m RB configuration information that may be common between different services, applicable in the current and/ or in neighbouring cells. The message contents does not change within a modification period.

RLC-SAP: UM

Logical channel: MCCH

| Information<br>Element/Group name | Need | Multi   | Type and reference                                      | Semantics description   | Version |
|-----------------------------------|------|---|---|---|---------|
| Message type                      | MP   |   | Message<br>Type   |   | REL-6   |
| RB information list               | MP   | 1 to<br><maxmb<br>MS-<br/>Commo<br/>nRB&gt;</maxmb<br>          | Туре  |   | REL-6   |
| >RB identity                      | MP   |   | MBMS<br>Common<br>RB<br>identity<br>10.3.9a.3           |   | REL-6   |
| >PDCP info                        | MP   |   | PDCP<br>info<br>10.3.4.2                                |   | REL-6   |
| >RLC info                         | MP   |   | RLC info<br>MBMS<br>10.3.4.23<br>a                      |   | REL-6   |
| TrCh information for each TrCh    | MP   | 1 to<br><maxmb<br>MS-<br/>Commo<br/>nTrCh&gt;</maxmb<br>        |   |   | REL-6   |
| >Transport channel identity       | MP   |   | MBMS<br>Common<br>TrCh<br>identity<br>10.3.9a.4         |   | REL-6   |
| >TFS                              | MP   |   | Transport format set 10.3.5.23                          |   | REL-6   |
| TrCh information for each CCTrCh  | OP   | 1 to<br><maxmb<br>MS-<br/>Commo<br/>nCCTrC<br/>h&gt;</maxmb<br> |   | The list needs not include the CCTrCh for which the default TFCS for MBMS applies, as specified in subclause 14.10.1. | REL-6   |
| >CCTrCH identity                  | MP   |   | MBMS<br>Common<br>CCTrCh<br>identity<br>10.3.9a.1       |   | REL-6   |
| >TFCS                             | MP   |   | Transport<br>format<br>combinati<br>on set<br>10.3.5.20 |   | REL-6   |
| PhyCh information                 | MP   | 1 to<br><maxmb<br>MS-<br/>Commo<br/>nPhyCh</maxmb<br>           |   |   | REL-6   |
| >PhyCh identity                   | MP   |   | MBMS<br>Common<br>PhyCh<br>identity<br>10.3.9a.2        |   | REL-6   |
| >Secondary CCPCH info<br>MBMS     | MP   |   | Secondar<br>y CCPCH<br>info<br>MBMS<br>10.3.6.71<br>a   |   | REL-6   |
| LCR TDD MBSFN                     | OP   |   | LCR TDD   | 1.28 Mcps TDD only: included  | REL-7   |

| Information Element/Group name | Need | Multi | Type and reference                    | Semantics description  | Version |
|--------------------------------|------|-------|---------------------------------------|--|---------|
| information                    |      |       | MBSFN<br>Informatio<br>n<br>10.3.6.78 | only if some timeslots of the secondary frequency of a multi-frequency cell are designated to MBSFN. |         |

# 10.2.16g MBMS CURRENT CELL P-T-M RB INFORMATION

This message is transmitted periodically by UTRAN to inform UEs about the PTM RB configuration used to in a cell, in case one or more MBMS service is provided using p-t-m radio bearers. The message contents does not change within a modification period.

RLC-SAP: UM

Logical channel: MCCH

| Information<br>Element/Group name        | Need            | Multi   | Type and reference  | Semantics description   | Version |
|--|-----------------|---|---|---|---------|
| Message type                             | MP              |   | Message<br>Type   | Current cell PTM RB info  | REL-6   |
| S-CCPCH list                             | OP              | 1 to<br><maxsc<br>CPCH&gt;</maxsc<br>   | .,,,,,  | Absent in case MTCH are only mapped to the S-CCPCH(s) included in SIB type 5 or 5bis  | REL-6   |
| >S-CCPCH identity                        | OP              |   | MBMS<br>Current<br>cell S-<br>CCPCH<br>identity<br>10.3.9a.5      | When L1- or L2 combining applies, this identity is used to refer to this S-CCPCH within the NEIGHBOURING CELL P-T-M RB INFORMATION message If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified. When Chip combining (1.28Mcps TDD only) applies, this identity is used to refer to the S-CCPCH within the NEIGHBOURING CELL P-T-M RB INFORMATION message | REL-6   |
| >Secondary CCPCH info                    | MP              |   | MBMS<br>Common<br>PhyCh<br>identity<br>10.3.9a.2                  | Refers to a configuration in the common RB info   | REL-6   |
| >MBMS Soft Combining<br>Timing Offset    | CV-Soft-<br>FDD |   | MBMS<br>Soft<br>Combinin<br>g Timing<br>Offset<br>10.3.9a.1<br>0a | Timing offset applied in the CFN calculation in sub-clause 8.5.15.5. The default value is 0 ms.  If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.  | REL-6   |
| >TrCh information<br>common for all TrCh | MD              |   | MBMS<br>Common<br>CCTrCh<br>identity<br>10.3.9a.1                 | Refers to a (TFCS) configuration in the common RB info The default value of the TFCS is specified in subclause 14.10.1  | REL-6   |
| >TrCH information list                   | MP              | 1 to<br><maxfa<br>CHPCH<br/>&gt;</maxfa<br>   |   | List of FACH transport channels carrying one or more MTCH and optionally one MSCH   | REL-6   |
| >>TrCh information                       | MP              |   | MBMS<br>Common<br>TrCh<br>identity<br>10.3.9a.4                   | Refers to a (TFS) configuration in the common RB info   | REL-6   |
| >>RB information list                    | OP              | 1 to<br><maxrb<br>perTrCh<br/>&gt;</maxrb<br>   |   | The IE is absent if temporarily no RBs are mapped to this TrCh or if the TrCH only carries MSCH   | REL-6   |
| >>>RB information                        | MP              |   | MBMS p-<br>t-m RB<br>informatio<br>n<br>10.3.9a.7<br>a            |   | REL-6   |
| >>MSCH configuration information         | OP              |   | MSCH<br>configurat<br>ion<br>informatio<br>n<br>10.3.9a.1         |   | REL-6   |
| S-CCPCH in SIB type 5                    | OP              | 1 to<br><maxsc< td=""><td></td><td>Every S-CCPCH's included in SIB type 5 or 5bis may carry</td><td>REL-6</td></maxsc<> |   | Every S-CCPCH's included in SIB type 5 or 5bis may carry  | REL-6   |

| Information<br>Element/Group name | Need  | Multi  | Type and reference | Semantics description  | Version |
|-----------------------------------|-------|--|--------------------|--|---------|
| Element/Group name                |       | CPCH>  | reference          | MTCH   |         |
|                                   |       | CFCI1>   |                    | If the cell is operating in MBSFN                              |         |
|                                   |       |  |                    | mode as indicated in subclause                                 |         |
|                                   |       |  |                    | 8.1.1.6.3 the UE behaviour upon                                |         |
|                                   |       |  |                    | reception of this IE is unspecified.                           |         |
| >S-CCPCH identity                 |       |  | Integer            | Index of the S-CCPCH within the                                | REL-6   |
| ,                                 |       |  | (1maxS<br>CCPCH)   | list included in SIB type 5 or 5bis                            |         |
| >TrCH information list            | MP    | 1 to<br><maxfa< td=""><td></td><td>List of FACH transport channels carrying one or more MTCH and</td><td>REL-6</td></maxfa<> |                    | List of FACH transport channels carrying one or more MTCH and  | REL-6   |
|                                   |       | CHPCH >  |                    | optionally one MSCH  |         |
| >>TrCh identity                   | MP    |  | Integer<br>(1maxF  | Index of the FACH within the list of TrChs defined for that S- | REL-6   |
|                                   |       |  | ACHPCH)            | CCPCH as included in SIB type 5 or 5bis                        |         |
| >>RB information list             | OP    | 1 to   |                    | The IE is absent if this TrCh only                             | REL-6   |
|                                   |       | <maxrb< td=""><td></td><td>carries MSCH</td><td></td></maxrb<>   |                    | carries MSCH   |         |
|                                   |       | perTrCh  |                    |  |         |
| >>>RB information                 | MP    | >  | MBMS p-            |  | REL-6   |
| >>>NB information                 | IVII  |  | t-m RB             |  | IXLL-0  |
|                                   |       |  | informatio         |  |         |
|                                   |       |  | n                  |  |         |
|                                   |       |  | 10.3.9a.7          |  |         |
|                                   |       |  | а                  |  |         |
| >>MSCH configuration              | OP    |  | MSCH               | Included if the TrCH carries                                   | REL-6   |
| information                       |       |  | configurat         | MSCH   |         |
|                                   |       |  | ion                |  |         |
|                                   |       |  | informatio         |  |         |
|                                   |       |  | n<br>10.2.0= 1     |  |         |
|                                   |       |  | 10.3.9a.1<br>6     |  |         |
| MBSFN TDM Info List               | CV-   |  | MBSFN              |  | REL-7   |
|                                   | Mbsfn |  | TDM                |  |         |
|                                   |       |  | Informatio         |  |         |
|                                   |       |  | n List             |  |         |
|                                   |       |  | 10.3.9a.1          |  |         |
|                                   |       |  | 2b                 |  |         |

| Condition | Explanation  |  |  |
|-----------|--|--|--|
| Soft-FDD  | This IE is used only for FDD. It is mandatory default                              |  |  |
|           | for FDD if the IE "L1 combining" is included in MBMS                               |  |  |
|           | NEIGHBOURING CELL P-T-M RB INFORMATION.  |  |  |
|           | Otherwise it is not needed.  |  |  |
| Mbsfn     | The IE is optionally present if the cell supports MBSFN, and not needed otherwise. |  |  |

# 10.2.16h MBMS GENERAL INFORMATION

This message is transmitted periodically by UTRAN to inform UEs about the general MBMS (configuration) information. The message contents does not change within a modification period.

RLC-SAP: UM

Logical channel: MCCH

| Information<br>Element/Group name             | Need | Multi | Type and reference   | Semantics description  | Version |
|---|------|-------|--|--|---------|
| Message type                                  | MP   |       | Message<br>Type  |  | REL-6   |
| MBMS preferred frequency information          | OP   |       | MBMS<br>preferred<br>frequency<br>informatio<br>n<br>10.3.7.43     | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.  | REL-6   |
| MBMS timers and counters                      | MP   |       | MBMS<br>specific<br>timers<br>and<br>counters<br>10.3.9a.1         |  | REL-6   |
| MICH configuration information                | MP   |       | MICH<br>configurat<br>ion<br>informatio<br>n<br>10.3.9a.1          |  | REL-6   |
| Cell group identity                           | MP   |       | Bit string<br>(12)   | Identifies the group of cells for which the same common RLC and PDCP entity is used as the current cell  | REL-6   |
| Default MSCH configuration information        | OP   |       | MSCH<br>configurat<br>ion<br>informatio<br>n<br>10.3.9a.1          | The default MSCH configuration   | REL-6   |
| Indicate changes in<br>MBMS Selected Services | MD   |       | Boolean  | True means the UE indicates changes in MBMS Selected Services while in URA_PCH, CELL_PCH or in CELL_FACH Default value is FALSE If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this IE has the value FALSE. | REL-6   |
| MBSFN inter frequency neighbour list          | OP   |       | MBSFN<br>inter<br>frequency<br>neighbour<br>list<br>10.3.7.43<br>b | May be included for FDD and 3.84/7.68 Mcps TDD if the cell is operating in MBSFN mode  | Rel-7   |

# 10.2.16i MBMS MODIFICATION REQUEST

The UE transmits this message to request UTRAN to take certain actions to improve the UE's ability to receive its (prioritised) activated MBMS services and/ or sessions.

RLC-SAP: AM

Logical channel: DCCH

| Information<br>Element/Group name                 | Need | Multi                             | Type and reference                                    | Semantics description   | Version |
|---|------|-----------------------------------|---|---|---------|
| Message type                                      | MP   |                                   | Message<br>Type                                       |   | REL-6   |
| UE information elements                           |      |                                   |   |   | REL-6   |
| Integrity check info                              | СН   |                                   | Integrity<br>check info<br>10.3.3.16                  |   | REL-6   |
| MBMS information elements                         |      |                                   |   |   | REL-6   |
| MBMS preferred frequency request                  | OP   |                                   | MBMS<br>service<br>identity<br>10.3.9a.8              | The MBMS preferred frequency the UE would like to be moved to. The MBMS preferred frequency is identified by the identity of the MBMS service the UE would like to receive. | REL-6   |
| MBMS RB list requested to be released             | OP   | 1 to<br><maxrb<br>&gt;</maxrb<br> |   | RBs of lower priority MBMS services inhibiting reception of a higher priority service   | REL-6   |
| >RB information to release                        | MP   |                                   | RB<br>informatio<br>n to<br>release<br>10.3.4.19      |   | REL-6   |
| MBMS Selected<br>Service Info                     | OP   |                                   | MBMS<br>Selected<br>Service<br>Info<br>10.3.9a.7<br>b |   | REL-6   |
| Support of MBMS<br>service change for a<br>ptp RB | OP   |                                   | Enumerat<br>ed (true)                                 | In this version of the specification, this IE has no meaning but it shall be included upon the conditions specified in subclause 8.7.6.2a.                                  | REL-6   |

# 10.2.16j MBMS MODIFIED SERVICES INFORMATION

This information is transmitted periodically by UTRAN to inform UEs about a change applicable for one or more MBMS services available in the current cell and possibly in neighbouring cells.

RLC-SAP: AM (DCCH only) or UM

Logical channel: MCCH, DCCH

| Information<br>Element/Group name | Need                                      | Multi  | Type and reference  | Semantics description   | Version |
|-----------------------------------|---|--|---|---|---------|
| Message type                      | MP  |  | Message<br>Type   |   | REL-6   |
| UE information elements           |   |  | .,,,,,  |   | REL-6   |
| Integrity check info              | CV-<br>DCCHC<br>H                         |  | Integrity<br>check info<br>10.3.3.16  | Integrity check info is included if integrity protection is applied   | REL-6   |
| MBMS information elements         |   |  |   |   | REL-6   |
| Modified service list             | OP  | 1<br><maxmb<br>MSserv<br/>Modif&gt;</maxmb<br> |   |   | REL-6   |
| >MBMS Transmission identity       | MP  |  | MBMS<br>Transmis<br>sion<br>identity<br>10.3.9a.1   |   | REL-6   |
| >MBMS required UE action          | MP  |  | Enumerat ed (None, Acquire counting info, Acquire counting info – PTM RBs unmodifie d, Acquire PTM RB info, RequestP TP RB, Release PTM RB) | Indicates required UE action upon receiving the message. When sent on the DCCH, only the following values apply: None, Acquire PTM RB info, request PTP RB). If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 all values except "Acquire PTM RB info" and "Release PTM RB" are handled as if "None" was received. | REL-6   |
| >MBMS PTM RB<br>Release Cause     | CV-<br>PTM_R<br>B_RELE<br>ASE_LC<br>R_TDD |  | Enumerat ed (NormalR elease, Out of MBMS Service Coverage in RAN, Network Abnormal Release)   | Indicates the PTM RB Release cause. For 1.28 Mcps TDD only.   | REL-7   |
| >MBMS preferred frequency         | OP  |  | ,   | Indicates the frequency that UEs shall consider as the preferred frequency. If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.   | REL-6   |
| >>PFL index                       | CV-<br>MCCH                               |  | Integer<br>(1<br><maxmb<br>MS-<br/>Freq&gt;)</maxmb<br>   | Index pointing to an entry in the list included in MBMS GENERAL INFORMATION. If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.  | REL-6   |
| >>PFL info                        | CV-<br>DCCH                               |  | Frequenc<br>y info<br>10.3.6.36   |   | REL-6   |
| >Continue MCCH                    | MP  |  | BOOLEA  | MCCH in- band notification.   | REL-6   |

| Information Element/Group name         | Need              | Multi | Type and reference                                    | Semantics description   | Version |
|--|-------------------|-------|---|---|---------|
| reading                                |                   |       | N   | Indicates whether or not the UE should continue reading MCCH in the next modification period. Not applicable when sent on the DCCH  |         |
| >MBSFN cluster frequency               | CV-<br>MBSFN      |       | Integer<br>(1 <max<br>MBSFNcl<br/>usters&gt;</max<br> | For FDD and 3.84/7.68 Mcps TDD index pointing to a frequency indicated in the IE "MBSFN inter frequency neighbour list" in MBMS General Information. Default: the current MBSFN cluster. For 1.28 Mcps TDD index pointing to a frequency indicated in the SIB 11. Default: the current MBSFN cluster. | REL-7   |
| MBMS re- acquire MCCH                  | CV-<br>MCCHO<br>P |       | Enumerat<br>ed (True)                                 |   | REL-6   |
| MBMS dynamic persistence level         | CV-<br>MCCHO<br>P |       | Dynamic<br>persistenc<br>e level<br>10.3.6.35         | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified  | REL-6   |
| End of modified MCCH information       | CV-<br>MCCHO<br>P |       | Integer<br>(116)                                      | If present: the UE may assume that, in each repetition period, all the MCCH information preceding the MBMS UNMODIFIED SERVICES INFORMATION message is transmitted within the indicated number of TTIs.  | REL-6   |
| MBMS number of neighbour cells         | MP                |       | Integer<br>(032)                                      | Indicates the number of MBMS NEIGHBOURING CELL P-T-M RB INFORMATION messages that are contained within the MCCH transmission. Not applicable when sent on the DCCH. If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if the value 0 was received.         | REL-6   |
| MBMS all unmodified p-t-<br>m services | CV-<br>MCCHO<br>P |       | Enumerat<br>ed (True)                                 | True means that the UE should re-acquire the PtM information for all services listed in the message MBMS UNMODIFIED SERVICES INFORMATION with the IE "MBMS required UE action" set to "Acquire PTM RB info"   | REL-6   |
| MBMS p-t-m activation time             | CV-<br>MCCHO<br>P |       | MBMS p-<br>t-m<br>activation<br>time<br>10.3.9a.7     |   | REL-6   |
| MIB Value tag                          | OP                |       | MIB<br>Value tag<br>10.3.8.9                          | Indicates the matching System Information.  | REL-7   |

| Condition              | Explanation  |
|------------------------|--|
| MCCH                   | This IE is mandatory present if the message is sent      |
|                        | via MCCH and not needed otherwise.                       |
| DCCH                   | This IE is mandatory present if the message is sent      |
|                        | via DCCH and not needed otherwise.                       |
| MCCHOP                 | This IE is optionally present if the message is sent via |
|                        | MCCH and not needed otherwise.                           |
| DCCHCH                 | This IE is present conditionnaly on history if the       |
|                        | message is sent via DCCH and not present                 |
|                        | otherwise.   |
| MBSFN                  | This IE is mandatory default when the cell on which      |
|                        | this IE is sent is operating in MBSFN mode according     |
|                        | to subclause 8.1.1.6.3. Otherwise the IE is not          |
|                        | needed.  |
| PTM_RB_RELEASE_LCR_TDD | This IE is optionally present if the IE "MBMS required   |
|                        | UE action" has the value "Release PTM RB".               |
|                        | Otherwise it is not needed. For 1.28 Mcps TDD only.      |

## 10.2.16k MBMS NEIGHBOURING CELL P-T-M RB INFORMATION

This message is transmitted periodically by UTRAN to inform UEs about the p-t-m RB configuration used to in neighbouring cells, indicating the UE may perform selection and/ or soft combining. The message content does not change within a modification period. If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this message is unspecified.

RLC-SAP: UM

Logical channel: MCCH

| Information<br>Element/Group name             | Need     | Multi                                 | Type and reference  | Semantics description  | Version        |
|---|----------|---------------------------------------|---|--|----------------|
| Message type                                  | MP       |                                       | Message<br>Type   |  | REL-6          |
| Neighbouring cell identity                    | MP       |                                       | Integer<br>(0 <max<br>CellMeas<br/>–1&gt;)</max<br>               | The intra-frequency cell id of the cell obtained from the IE 'Intra-frequency Cell Info list' in SIB 11/SIB 11bis. In case the intra-frequency cell id is omitted in the IE 'Intra-frequency Cell Info list' in SIB 11/SIB11bis, it refers to the index (starting at zero) in the CELL_INFO_LIST as if the CELL_INFO_LIST was constructed from SIB11/SIB11bis only, see 8.6.7.3. | REL-6          |
| Neighbouring cell's S-<br>CCPCH list          | MP       | 1 to<br><maxsc<br>CPCH&gt;</maxsc<br> |   |  | REL-6          |
| >CHOICE PhyCh                                 | MP       | 0. 0                                  |   |  | REL-7          |
| >>By reference                                |          |                                       |   |  | REL-7          |
| >>>Secondary CCPCH info                       | MP       |                                       | MBMS<br>Common<br>PhyCh<br>identity<br>10.3.9a.2                  | S-CCPCH configuration used in<br>neighbouring cell. Refers to a<br>configuration in the common RB<br>info of the current cell  | REL-6          |
| >>Extended                                    |          |                                       |   | FDD only   | REL-7          |
| >>>Secondary CCPCH info                       | OP<br>MP |                                       | MBMS<br>Common<br>PhyCh<br>identity<br>10.3.9a.2                  | Referenced S-CCPCH configuration used in neighbouring cell. Refers to a configuration in the common RB info of the current cell Differential S-CCPCH   | REL-7          |
| >>>Secondary CCPCH info MBMS Diff             | WP       |                                       | Secondar<br>y CCPCH<br>info<br>MBMS<br>Diff<br>10.3.6.71<br>b     | configuration. Physical configuration parameters in this IE replace the corresponding parameters in the referenced S-CCPCH configuration. If the referenced S-CCPCH configuration is absent, the full set of parameters is needed.   |                |
| >Secondary CCPCH Power Offset Difference      | MD       |                                       | Integer<br>(-6, -3, 3,<br>6)                                      | Difference (Pn – Of) between the S-CCPCH power offset (Pn) of the neighboring cell S-CCPCH and the S-CCPCH power offset (Of) of the serving cell that is going to be combined to this neighbour cell S-CCPCH, in dB. Default value is 0.  Note 3 and 4.  | REL-6          |
| >L1 combining                                 | OP       |                                       |   | L2- combining applies if the IE is absent  | REL-6          |
| >>CHOICE mode<br>>>>FDD                       | MP       |                                       |   |  | REL-6<br>REL-6 |
| >>>FDD  >>>>MBMS Soft Combining Timing Offset | MP       |                                       | MBMS<br>Soft<br>Combinin<br>g Timing<br>Offset<br>10.3.9a.1<br>0a | Timing offset applied in the CFN calculation in subclause 8.5.15.5   | REL-6          |
| >>>>MBMS transmission time difference         | MP       |                                       | Integer (03)  | Indicates the time difference<br>between the TTIs on the current<br>and the neighbouring cell's<br>SCCPCH that can be L1-<br>combined  | REL-6          |
| >>>>MBMS L1                                   | OP       |                                       | MBMS L1 combining   | If included partial layer 1 combining applies, in which case   | REL-6          |

| Information<br>Element/Group name           | Need | Multi   | Type and reference   | Semantics description  | Version        |
|---|------|---|--|--|----------------|
|   |      |   | schedule<br>10.3.9a.7  | this IE indicates when L1-<br>combining applies. If the IE is<br>absent, L1 combining applies<br>continuously  |                |
| >>>TDD                                      |      |   |  | (no data)  If L1 combining is configured, for 1.28Mcps TDD UE, MBMS data reception shall be implemented by means of chip combine receiver [55].  | REL-6<br>REL-7 |
| >CHOICE L23 configuration                   | MP   |   |  |  | REL-6          |
| >>SameAs Current cell                       |      |   |  | Apart from the physical channel configuration and the MSCH configuration information, the same configuration as for the indicated S-CCPCH used in the current cell applies. The MSCH is mapped on the same transport channel as in the current cell. | REL-6          |
| >>>Current cell's S-<br>CCPCH               | MP   |   | MBMS<br>Current<br>cell S-<br>CCPCH<br>identity<br>10.3.9a.5 | Reference to the S-CCPCH in the current cell which uses exactly the same configuration (excluding MSCH configuration).   | REL-6          |
| >>>MSCH configuration information           | OP   |   | MSCH<br>configurat<br>ion<br>informatio<br>n<br>10.3.9a.1    |  | REL-6          |
| >>Different                                 |      |   | 0  |  | REL-6          |
| >>>TrCh information for common for all TrCh | MD   |   | MBMS<br>Common<br>CCTrCh<br>identity<br>10.3.9a.1            | Refers to a (TFCS) configuration in the common RB info The default value of the TFCS is specified in subclause 14.10.1   | REL-6          |
| >>>TrCH information list                    | MP   | 1 to<br><maxfa<br>CHPCH<br/>&gt;</maxfa<br>   |  | List of FACH transport channels carrying one or more MTCH and optionally one MSCH  | REL-6          |
| >>>>TrCh information                        | MP   |   | MBMS<br>Common<br>TrCh<br>identity<br>10.3.9a.4              | Refers to a (TFS) configuration in the common RB info  | REL-6          |
| >>>>TrCh combining status                   | MP   |   | BOOLEA<br>N  | Value TRUE means that TrCh combining is used for this transport channel (TDD only). Note 2. The IE shall be ignored in FDD mode.   | REL-6          |
| >>>>RB information list                     | ОР   | 1 to<br><maxrb<br>perTrCh<br/>&gt;</maxrb<br> |  | The IE is only present for the radio bearers for which selection (FDD) or transport channel (TDD) combining applies.   | REL-6          |
| >>>>RB information                          | MP   |   | MBMS p-<br>t-m RB<br>informatio<br>n<br>10.3.9a.7<br>a       |  | REL-6          |
| >>>MSCH configuration information           | OP   |   | MSCH<br>configurat   | Included if the TrCH carries MSCH  | REL-6          |

| Information<br>Element/Group name | Need | Multi | Type and reference  | Semantics description | Version |
|-----------------------------------|------|-------|---------------------|-----------------------|---------|
|                                   |      |       | ion<br>informatio   |                       |         |
|                                   |      |       | n<br>10.3.9a.1<br>6 |                       |         |

- NOTE 1: The signalling supports the option that UTRAN maps one service to L1 combining slots for some neighbours and to the L2 combining slots for other neighbours ie. the use of different combining schemes for different neighbours
- NOTE 2: Transport combining can only be indicated when the complete L2 configuration is provided for the neighbouring cell (i.e. using L2 configuration choice "different"). Fortunately, a scenario in which the neighbouring cell configuration is different from the current cell is regarded as the typical scenario for using transport combining.
- NOTE 3: For FDD, an S-CCPCH power offset is defined as the offset between the transmitted power of the data part of one S-CCPCH and the transmitted power of the P-CPICH of a given cell (Ps-ccpch Pp-cpich). For TDD, an S-CCPCH power offset is defined as the offset between one S-CCPCH and the P-CCPCH of a given cell (Ps-ccpch Pp-ccpch).
- NOTE 4: The Secondary CCPCH Power Offset Difference IE gives the UE an indication of the S-CCPCH power on the neighbouring cells that may be used to complete the neighbouring cell ranking based on P-CPICH power for FDD or P-CCPCH for TDD.

#### 10.2.16L MBMS SCHEDULING INFORMATION

This message is transmitted periodically by UTRAN to inform UEs when the MBMS services, provided on the same S-CCPCH as the message is sent, are scheduled to be transmitted. The UE may use the scheduling information to discontinue receiving the concerned S-CCPCH. The message is transmitted in accordance with the MSCH configuration applicable for the corresponding S-CCPCH.

RLC-SAP: UM

Logical channel: MSCH

| Information<br>Element/Group name        | Need | Multi                               | Type and reference                                     | Semantics description   | Version |
|--|------|-------------------------------------|--|---|---------|
| Message type                             | MP   |                                     | Message<br>Type  |   | REL-6   |
| Service scheduling info list             | MP   | 1 to <<br>maxMB<br>MSserv<br>Sched> |  |   | REL-6   |
| >MBMS Transmission identity              | MP   |                                     | MBMS<br>Transmis<br>sion<br>identity<br>10.3.9a.1<br>2 |   | REL-6   |
| >MBMS Service<br>transmissions info list | OP   | 1 to <<br>maxMB<br>MSTran<br>smis>  |  | One or more sets of scheduling information comprising of the beginning and duration of an MBMS service transmission for one scheduling period   | REL-6   |
| >>Start                                  | MP   |                                     | Integer<br>(01020)<br>by step of<br>4                  | Indicates the start of the transmission relative to the start of the TTI in which the MBMS SCHEDULING INFORMATION message was received. In number of radio frames (i.e. the value 0 would correspond to the start of the MBMS transmission being in the same TTI as the MBMS Scheduling Information message.) See note 1.     | REL-6   |
| >>Duration                               | MP   |                                     | Integer<br>(41024)<br>by step of<br>4                  | In number of radio frames   | REL-6   |
| >Next scheduling period                  | MP   |                                     | Integer<br>(031)                                       | Number of scheduling periods (see 10.3.9a.16), after the current scheduling period, in which no data will be transmitted for the concerned service. If the Next scheduling period is set to 0, data may be transmitted for the concerned service in the scheduling period immediately following the current scheduling period | REL-6   |

NOTE: If UTRAN sets the value of the IE "Start" to a value less than or equal to 16 then the UE may not successfully receive the start of the MTCH transmission.

#### 10.2.16m MBMS UNMODIFIED SERVICES INFORMATION

This message is transmitted periodically by UTRAN to inform UEs about the MBMS services, available in the current cell and possibly in neighbouring cells, that have not changed if the IE "MBMS all unmodified p-t-m services" is not included in the MBMS MODIFIED SERVICES INFORMATION message in this modification period. The message is repeated every repetition period while its contents does not change within a modification period.

RLC-SAP: UM

Logical channel: MCCH

| Information<br>Element/Group name | Need         | Multi  | Type and reference  | Semantics description   | Version |
|-----------------------------------|--------------|--|---|---|---------|
| Message type                      | MP           |  | Message<br>Type   |   | REL-6   |
| Unmodified services list          | OP           | 1 to<br><maxmb<br>MSserv<br/>Unmodif<br/>&gt;</maxmb<br> |   | If the IE "MBMS all unmodified p-t-m services" is included in the MBMS MODIFIED SERVICES INFORMATION message in this modification period, the services with the IE "MBMS required UE action" set to "Acquire PTM RB info" in the message MBMS UNMODIFIED SERVICES INFORMATION should be considered as modified.   | REL-6   |
| >MBMS Transmission identity       | MP           |  | MBMS<br>Transmis<br>sion<br>identity<br>10.3.9a.1<br>2                    |   | REL-6   |
| >MBMS required UE action          | MP           |  | Enumerat<br>ed (None,<br>Acquire<br>PTM RB<br>info,<br>Request<br>PTP RB) | Indication of the UE action required to receive the service. If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 all values except "Acquire PTM RB info" are handled as if "None" was received.  | REL-6   |
| >MBMS preferred frequency         | OP           |  | Integer<br>(1<br><maxmb<br>MS-<br/>Freq&gt;)</maxmb<br>                   | Information about the frequency that UEs shall consider as the preferred frequency layer for cell re-selection during a session for an activated MBMS service, as specified in [25.304].  Index pointing to an entry in the list included in MBMS GENERAL INFORMATION.  If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified. | REL-6   |
| >MBSFN cluster<br>frequency       | CV-<br>MBSFN |  | Integer<br>(1 <max<br>MBSFNcl<br/>usters&gt;</max<br>                     | For FDD and 3.84/7.68 Mcps TDD index pointing to a frequency indicated in the IE "MBSFN inter frequency neighbour list " in MBSFN General Information. Default: the current MBSFN cluster. For 1.28 Mcps TDD index pointing to a frequency indicated in the SIB 11. Default: the current MBSFN cluster.   | REL-7   |

| Condition | Explanation  |
|-----------|--|
| MBSFN     | This IE is mandatory present when the cell on which this IE is sent is operating in MBSFN mode according to subclause 8.1.1.6.3. Otherwise the IE is not needed. |

# 10.2.17 MEASUREMENT CONTROL

This message is sent by UTRAN to setup, modify or release a measurement in the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

| Information Element/Group name        | Need           | Multi | Type and reference                                     | Semantics description |
|---------------------------------------|----------------|-------|--|-----------------------|
| Message Type                          | MP             |       | Message<br>Type  |                       |
| UE information elements               | 1              |       | Турс   |                       |
| RRC transaction identifier            | MP             |       | RRC<br>transaction<br>identifier<br>10.3.3.36          |                       |
| Integrity check info                  | CH             |       | Integrity<br>check info<br>10.3.3.16                   |                       |
| Measurement Information elements      |                |       |  |                       |
| Measurement Identity                  | MP             |       | Measuremen<br>t Identity<br>10.3.7.48                  |                       |
| Measurement Command                   | MP             |       | Measuremen<br>t Command<br>10.3.7.46                   |                       |
| Measurement Reporting Mode            | OP             |       | Measuremen<br>t Reporting<br>Mode<br>10.3.7.49         |                       |
| Additional measurements list          | OP             |       | Additional<br>measuremen<br>ts list<br>10.3.7.1        |                       |
| CHOICE Measurement type               | CV-<br>command |       |  |                       |
| >Intra-frequency measurement          |                |       | Intra-<br>frequency<br>measuremen<br>t 10.3.7.36       |                       |
| >Inter-frequency measurement          |                |       | Inter-<br>frequency<br>measuremen<br>t 10.3.7.16       |                       |
| >Inter-RAT measurement                |                |       | Inter-RAT<br>measuremen<br>t 10.3.7.27                 |                       |
| >UE positioning measurement           |                |       | UE<br>positioning<br>measuremen<br>t 10.3.7.100        |                       |
| >Traffic Volume measurement           |                |       | Traffic<br>Volume<br>measuremen<br>t 10.3.7.68         |                       |
| >Quality measurement                  |                |       | Quality<br>measuremen<br>t 10.3.7.56                   |                       |
| >UE internal measurement              |                |       | UE internal<br>measuremen<br>t 10.3.7.77               |                       |
| Physical channel information elements |                |       |  |                       |
| DPCH compressed mode status info      | OP             |       | DPCH<br>compressed<br>mode status<br>info<br>10.3.6.34 |                       |

| Condition | Explanation   |
|-----------|---|
| Command   | The IE is mandatory present if the IE "Measurement command" is set to "Setup", optional if the IE |
|           | "Measurement command" is set to "modify", otherwise the IE is not needed.                         |

## 10.2.18 MEASUREMENT CONTROL FAILURE

This message is sent by UE, if it cannot initiate a measurement as instructed by UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| Message Type                   | MP   |       | Message<br>Type   |                       |
| UE information elements        |      |       |   |                       |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36             |                       |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16                      |                       |
| Failure cause                  | MP   |       | Failure<br>cause and<br>error<br>information<br>10.3.3.14 |                       |

## 10.2.19 MEASUREMENT REPORT

This message is used by UE to transfer measurement results to the UTRAN.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UE→UTRAN

| Information          | Need | Multi  | Type and   | Semantics description | Version |
|----------------------|------|--|------------|-----------------------|---------|
| Element/Group name   |      |  | reference  |                       |         |
| Message Type         | MP   |  | Message    |                       |         |
|                      |      |  | Type       |                       |         |
| UE information       |      |  |            |                       |         |
| elements             |      |  |            |                       |         |
| Integrity check info | CH   |  | Integrity  |                       |         |
|                      |      |  | check info |                       |         |
|                      |      |  | 10.3.3.16  |                       |         |
| Measurement          |      |  |            |                       |         |
| Information Elements |      |  |            |                       |         |
| Measurement identity | MP   |  | Measure    |                       |         |
| -                    |      |  | ment       |                       |         |
|                      |      |  | identity   |                       |         |
|                      |      |  | 10.3.7.48  |                       |         |
| Measured Results     | OP   |  | Measured   |                       |         |
|                      |      |  | Results    |                       |         |
|                      |      |  | 10.3.7.44  |                       |         |
| Measured Results on  | OP   |  | Measured   |                       |         |
| RACH                 |      |  | Results    |                       |         |
|                      |      |  | on RACH    |                       |         |
|                      |      |  | 10.3.7.45  |                       |         |
| Additional Measured  | OP   | 1 to   |            |                       |         |
| results              |      | <maxad< td=""><td></td><td></td><td></td></maxad<> |            |                       |         |
|                      |      | ditional   |            |                       |         |
|                      |      | Meas>  |            |                       |         |
| >Measured Results    | MP   |  | Measured   |                       |         |
|                      |      |  | Results    |                       |         |
|                      |      |  | 10.3.7.44  |                       |         |
| Event results        | OP   |  | Event      |                       |         |
|                      |      |  | results    |                       |         |
|                      |      |  | 10.3.7.7   |                       |         |
| Inter-RAT cell info  | CV-  |  | Integer    |                       | REL-5   |
| indication           | IRAT |  | (03)       |                       |         |

| Condition | Explanation  |
|-----------|--|
| IRAT      | The IE is optionally present if at least one of the IE |
|           | "Inter-RAT measured results list" and the IE "Inter-   |
|           | RAT measurement event results" is included in the      |
|           | message. Otherwise, the IE is not needed.              |

# 10.2.20 PAGING TYPE 1

This message is used to send information on the paging channel. One or several UEs, in idle or connected mode, can be paged in one message, which also can contain other information.

RLC-SAP: TM

Logical channel: PCCH

| Information Element/Group | Need | Multi | Type and  | Semantics description |
|---------------------------|------|-------|-----------|-----------------------|
| name                      |      |       | reference |                       |

| Message Type               | MP |   | Message       |  |
|----------------------------|----|---|---------------|--|
|                            |    |   | Туре          |  |
| UE Information elements    |    |   |               |  |
| Paging record list         | OP | 1 to  |               |  |
|                            |    | <maxpage< td=""><td></td><td></td></maxpage<> |               |  |
|                            |    | 1>  |               |  |
| >Paging record             | MP |   | Paging        |  |
|                            |    |   | record        |  |
|                            |    |   | 10.3.3.23     |  |
| Other information elements |    |   |               |  |
| BCCH modification info     | OP |   | BCCH          |  |
|                            |    |   | modification  |  |
|                            |    |   | info 10.3.8.1 |  |

If the encoded message does not fill a transport block, the RRC layer shall add padding according to subclause 12.1.

#### 10.2.21 PAGING TYPE 2

This message is used to page a UE in connected mode, when using the DCCH for CN originated paging.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN  $\rightarrow$  UE

| Information Element/Group name | Need | Multi | Type and reference                               | Semantics description |
|--------------------------------|------|-------|--|-----------------------|
| Message Type                   | MP   |       | Message<br>Type                                  |                       |
| UE information elements        |      |       |  |                       |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36    |                       |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16             |                       |
| Paging cause                   | MP   |       | Paging cause 10.3.3.22                           |                       |
| CN Information elements        |      |       |  |                       |
| CN domain identity             | MP   |       | CN domain identity 10.3.1.1                      |                       |
| Paging Record Type Identifier  | MP   |       | Paging<br>Record Type<br>Identifier<br>10.3.1.10 |                       |

#### 10.2.22 PHYSICAL CHANNEL RECONFIGURATION

This message is used by UTRAN to assign, replace or release a set of physical channels used by a UE.

RLC-SAP: AM or UM

Logical channel: DCCH

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| Message Type                   | MP   |       | Message<br>Type    |                       |         |

| Information Element/Group name     | Need                | Multi | Type and reference                                    | Semantics description  | Version |
|------------------------------------|---------------------|-------|---|--|---------|
| UE Information Elements            |                     |       |   |  |         |
| RRC transaction identifier         | MP                  |       | RRC<br>transaction<br>identifier<br>10.3.3.36         |  |         |
| Integrity check info               | СН                  |       | Integrity<br>check info<br>10.3.3.16                  |  |         |
| Integrity protection mode info     | OP                  |       | Integrity<br>protection<br>mode info<br>10.3.3.19     | The UTRAN should not include this IE unless it is performing an SRNS relocation  |         |
| Ciphering mode info                | OP                  |       | Ciphering<br>mode info<br>10.3.3.5                    | The UTRAN should not include this IE unless it is performing an SRNS relocation and a change in ciphering algorithm  |         |
| Activation time                    | MD                  |       | Activation time 10.3.3.1                              | Default value is "now"   |         |
| Delay restriction flag             | OP                  |       | Enumerated<br>(TRUE)                                  | This IE is always set to TRUE and included if the activation time is restricted according to subclause 8.6.3.1   | REL-6   |
| New U-RNTI                         | OP                  |       | U-RNTI<br>10.3.3.47                                   |  |         |
| New C-RNTI                         | OP                  |       | C-RNTI<br>10.3.3.8                                    |  |         |
| New DSCH-RNTI                      | OP                  |       | DSCH-RNTI<br>10.3.3.9a                                | Should not be set<br>in FDD. If<br>received the UE<br>should ignore it   |         |
| New H-RNTI                         | OP                  |       | H-RNTI<br>10.3.3.14a                                  | <u> </u>   | REL-5   |
| New Primary E-RNTI                 | OP                  |       | E-RNTI<br>10.3.3.10a                                  |  | REL-6   |
| New Secondary E-RNTI               | OP                  |       | E-RNTI<br>10.3.3.10a                                  | FDD only   | REL-6   |
| RRC State Indicator                | MP                  |       | RRC State<br>Indicator<br>10.3.3.35a                  |  |         |
| UE Mobility State Indicator        | CV-<br>FACH_PC<br>H |       | Enumerated<br>(High-<br>mobilityDete<br>cted)         | Absence of this IE implies that, according to [4], the UE shall consider itself being in the mobility state the UE has maintained in CELL_DCH state or being not in high mobility state after the state transition, if applicable. | REL-7   |
| UTRAN DRX cycle length coefficient | OP                  |       | UTRAN DRX<br>cycle length<br>coefficient<br>10.3.3.49 |  |         |

| Information Element/Group name                                   | Need | Multi                                       | Type and reference                                 | Semantics description  | Version |
|--|------|---|--|--|---------|
| CN Information Elements  |      |   |  |  |         |
| CN Information info  | OP   |   | CN<br>Information<br>info 10.3.1.3                 |  |         |
| UTRAN mobility information elements                              |      |   | 1110 10.3.1.3                                      |  |         |
| URA identity   | OP   |   | URA identity<br>10.3.2.6                           |  |         |
| RNC support for change of UE capability                          | OP   |   | Boolean  | Should be included if the message is used to perform an SRNS relocation                          | REL-7   |
| Reconfiguration in response to requested change of UE capability | OP   |   | Enumerated (TRUE)                                  |  | REL-7   |
| RB information elements  |      |   |  |  |         |
| Downlink counter synchronisation info                            | OP   |   |  |  |         |
| >RB with PDCP information list                                   | OP   | 1 to<br><maxrball<br>RABs&gt;</maxrball<br> |  |  |         |
| >>RB with PDCP information                                       | MP   |   | RB with<br>PDCP<br>information<br>10.3.4.22        | This IE is needed<br>for each RB<br>having PDCP in<br>the case of<br>lossless SRNS<br>relocation |         |
|  | OP   |   |  |  | REL-5   |
| >>PDCP context relocation info                                   | OP   |   | PDCP<br>context<br>relocation<br>info<br>10.3.4.1a | This IE is needed<br>for each RB<br>having PDCP and<br>performing PDCP<br>context relocation     | REL-5   |
| PhyCH information elements                                       |      |   |  |  |         |
| Frequency info   | OP   |   | Frequency<br>info<br>10.3.6.36                     |  |         |
| Multi-frequency Info   | OP   |   | Multi-<br>frequency<br>Info<br>10.3.6.39a          | This IE is used for 1.28 Mcps TDD only   | REL-7   |
| DTX-DRX timing information                                       | OP   |   | DTX-DRX<br>timing<br>information<br>10.3.6.34b     |  | REL-7   |
| DTX-DRX Information  | OP   |   | DTX-DRX<br>Information<br>10.3.6.34a               |  | REL-7   |
| HS-SCCH less Information   | OP   |   | HS-SCCH<br>less<br>Information<br>10.3.6.36ab      |  | REL-7   |
| MIMO parameters  | OP   |   | MIMO<br>parameters<br>10.3.6.41a                   |  | REL-7   |
| HARQ Info  | OP   |   | HARQ info<br>10.3.5.7a                             |  | REL-7   |
| Uplink radio resources   |      |   |  |  |         |
| Maximum allowed UL TX power                                      | MD   |   | Maximum<br>allowed UL<br>TX power<br>10.3.6.39     | Default value is<br>the existing value<br>of the maximum<br>allowed UL TX                        |         |
| Uplink DPCH info   | OP   |   | Uplink   | power  |         |
|  | OI.  |   | Ohiiik   | L  |         |

| Information Element/Group name                  | Need | Multi                   | Type and reference   | Semantics description                         | Version |
|---|------|-------------------------|--|---|---------|
|   |      |                         | DPCH info<br>10.3.6.88   |   |         |
| E-DCH Info                                      | OP   |                         | E-DCH Info<br>10.3.6.97  |   | REL-6   |
| Downlink radio resources                        |      |                         |  |   |         |
| Downlink HS-PDSCH<br>Information                | OP   |                         | Downlink HS_PDSCH Information 10.3.6.23a                       |   | REL-5   |
| Downlink information common for all radio links | OP   |                         | Downlink information common for all radio links 10.3.6.24      |   |         |
| Downlink information per radio link list        | OP   | 1 to<br><maxrl></maxrl> |  | Send downlink information for each radio link |         |
| >Downlink information for each radio link       | MP   |                         | Downlink<br>information<br>for each<br>radio link<br>10.3.6.27 |   |         |
| MBMS PL Service Restriction Information         | OP   |                         | Enumerated (TRUE)  |   | REL-6   |

| Condition | Explanation   |
|-----------|---|
| FACH_PCH  | This IE is mandatory default when a transition from CELL_DCH to CELL_FACH, URA_PCH or CELL PCH is requested by the message and is not |
|           | needed otherwise.   |

## 10.2.23 PHYSICAL CHANNEL RECONFIGURATION COMPLETE

This message is sent from the UE when a physical channel reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

| Information Element/Group name              | Need | Multi | Type and reference   | Semantics description | Version |
|---|------|-------|--|-----------------------|---------|
| Message Type                                | MP   |       | Message<br>Type  |                       |         |
| UE information elements                     |      |       |  |                       |         |
| RRC transaction identifier                  | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36              |                       |         |
| Integrity check info                        | СН   |       | Integrity<br>check info<br>10.3.3.16                       |                       |         |
| Uplink integrity protection activation info | OP   |       | Integrity<br>protection<br>activation<br>info<br>10.3.3.17 |                       |         |
| CHOICE mode                                 | MP   |       |  |                       |         |
| >FDD  |      |       |  | (no data)             |         |
| >TDD  |      |       |  |                       |         |
| >>CHOICE TDD option                         | MP   |       |  |                       | REL-4   |

| Information Element/Group name       | Need | Multi                                       | Type and reference                                    | Semantics description   | Version |
|--------------------------------------|------|---|---|---|---------|
| >>>3.84 Mcps TDD                     |      |   |   | •   | REL-4   |
| >>>Uplink Timing Advance             | OP   |   | Uplink<br>Timing<br>Advance<br>10.3.6.95              |   |         |
| >>>Extended Uplink Timing Advance    | OP   |   | Extended<br>Uplink<br>Timing<br>Advance<br>10.3.6.95a |   | REL-7   |
| >>>7.68 Mcps TDD                     |      |   |   |   | REL-7   |
| >>>Extended Uplink Timing Advance    | OP   |   | Extended<br>Uplink<br>Timing<br>Advance<br>10.3.6.95a |   | REL-7   |
| >>>1.28 Mcps TDD                     |      |   |   | (no data)   | REL-4   |
| Other Information elements           |      |   |   | ,   | REL-7   |
| Deferred measurement control reading | MD   |   | Enumerated<br>(TRUE)                                  | Indicates the UE has not read SIB11, SIB11bis and SIB12, if available. Default value is FALSE | REL-7   |
| RB Information elements              |      |   |   |   |         |
| COUNT-C activation time              | OP   |   | Activation time 10.3.3.1                              | Used for radio<br>bearers mapped<br>on RLC-TM.  |         |
| Uplink counter synchronisation info  | OP   |   |   |   |         |
| >RB with PDCP information list       | OP   | 1 to<br><maxrball<br>RABs&gt;</maxrball<br> |   |   |         |
| >>RB with PDCP information           | MP   |   | RB with<br>PDCP<br>information<br>10.3.4.22           |   |         |
| >START list                          | MP   | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br>  |   | START [40]<br>values for all CN<br>domains.   |         |
| >>CN domain identity                 | MP   |   | CN domain identity 10.3.1.1                           |   |         |
| >>START                              | MP   |   | START<br>10.3.3.38                                    | START value to be used in this CN domain.   |         |

# 10.2.24 PHYSICAL CHANNEL RECONFIGURATION FAILURE

This message is sent by UE if the configuration given by UTRAN is unacceptable or if the UE failed to assign, replace or release a set of physical channel(s).

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group  | Need | Multi | Type and    | Semantics description |
|----------------------------|------|-------|-------------|-----------------------|
| name                       |      |       | reference   |                       |
| Message type               | MP   |       | Message     |                       |
|                            |      |       | type        |                       |
| UE information elements    |      |       |             |                       |
| RRC transaction identifier | OP   |       | RRC         |                       |
|                            |      |       | transaction |                       |
|                            |      |       | identifier  |                       |
|                            |      |       | 10.3.3.36   |                       |
| Integrity check info       | CH   |       | Integrity   |                       |
|                            |      |       | check info  |                       |
|                            |      |       | 10.3.3.16   |                       |
| Failure cause              | MP   |       | Failure     |                       |
|                            |      |       | cause and   |                       |
|                            |      |       | error       |                       |
|                            |      |       | information |                       |
|                            |      |       | 10.3.3.14   |                       |

## 10.2.25 PHYSICAL SHARED CHANNEL ALLOCATION

NOTE: Only for TDD.

This message is used by UTRAN to assign physical resources to USCH/DSCH transport channels in TDD, for temporary usage by the UE.

RLC-SAP: UM on SHCCH, UM on DCCH

Logical channel: SHCCH or DCCH

| Information Element/Group name | Need | Multi | Type and reference | Semantics description           |
|--------------------------------|------|-------|--------------------|---------------------------------|
| Message Type                   | MP   |       | Message            |                                 |
|                                |      |       | type               |                                 |
| DSCH-RNTI                      | OP   |       | DSCH-RNTI          |                                 |
|                                |      |       | 10.3.3.9a          |                                 |
| RRC transaction identifier     | MP   |       | RRC                |                                 |
|                                |      |       | transaction        |                                 |
|                                |      |       | identifier         |                                 |
|                                |      |       | 10.3.3.36          |                                 |
| Uplink timing advance Control  | MD   |       | Uplink             | Default value is the existing   |
|                                |      |       | Timing             | value for uplink timing advance |
|                                |      |       | Advance            |                                 |
|                                |      |       | Control            |                                 |
|                                |      |       | 10.3.6.96          |                                 |
| PUSCH capacity allocation info | OP   |       | PUSCH              |                                 |
|                                |      |       | Capacity           |                                 |
|                                |      |       | Allocation         |                                 |
|                                |      |       | info               |                                 |
|                                |      |       | 10.3.6.64          |                                 |
| PDSCH capacity allocation info | OP   |       | PDSCH              |                                 |
|                                |      |       | Capacity           |                                 |
|                                |      |       | Allocation         |                                 |
|                                |      |       | info               |                                 |
|                                |      |       | 10.3.6.42          |                                 |
| Confirm request                | MD   |       | Enumerated(        | Default value is No Confirm     |
| •                              |      |       | No Confirm,        |                                 |
|                                |      |       | Confirm            |                                 |
|                                |      |       | PDSCH,             |                                 |
|                                |      |       | Confirm            |                                 |
|                                |      |       | PUSCH)             |                                 |
| Traffic volume report request  | OP   |       | Integer (0         | Indicates the number of         |
| · · ·                          |      |       | 255)               | frames between start of the     |
|                                |      |       |                    | allocation period and sending   |
|                                |      |       |                    | measurement report. The         |

| Information Element/Group name | Need | Multi         | Type and reference              | Semantics description   |
|--------------------------------|------|---------------|---------------------------------|---|
|                                |      |               |                                 | value should be less than the value for Allocation Duration.  |
| ISCP Timeslot list             | OP   | 1 to<br>maxTS |                                 |   |
| >Timeslot number               | MP   |               | Timeslot<br>number<br>10.3.6.84 | Timeslot numbers, for which the UE shall report the timeslot ISCP in PUSCH CAPACITY REQUEST message.                |
| Request P-CCPCH RSCP           | MP   |               | Boolean                         | TRUE indicates that a Primary CCPCH RSCP measurement shall be reported by the UE in PUSCH CAPACITY REQUEST message. |

# 10.2.26 PUSCH CAPACITY REQUEST

NOTE: Only for TDD.

This message is used by the UE for request of PUSCH resources to the UTRAN.

RLC-SAP: TM

Logical channel: SHCCH

| Information Element/Group name | Need       | Multi | Type and reference | Semantics description  |
|--------------------------------|------------|-------|--------------------|------------------------|
| Message Type                   | MP         |       | Message            |                        |
|                                |            |       | Type               |                        |
| DSCH-RNTI                      | OP         |       | DSCH-RNTI          |                        |
|                                |            |       | 10.3.3.9a          |                        |
| RRC transaction identifier     | CV-ProtErr |       | RRC                |                        |
|                                |            |       | transaction        |                        |
|                                |            |       | identifier         |                        |
|                                |            |       | 10.3.3.36          |                        |
| Traffic Volume                 | OP         |       | Traffic            |                        |
|                                |            |       | Volume,            |                        |
|                                |            |       | measured           |                        |
|                                |            |       | results list       |                        |
|                                |            |       | 10.3.7.67          |                        |
| Timeslot list                  | OP         | 1 to  |                    |                        |
|                                |            | maxTS |                    |                        |
| >Timeslot number               | MP         |       | Timeslot           |                        |
|                                |            |       | number             |                        |
|                                |            |       | 10.3.6.84          |                        |
| >Timeslot ISCP                 | MP         |       | Timeslot           |                        |
|                                |            |       | ISCP info          |                        |
|                                |            |       | 10.3.7.65          |                        |
| Primary CCPCH RSCP             | OP         |       | Primary            |                        |
|                                |            |       | CCPCH              |                        |
|                                |            |       | RSCP info          |                        |
| 0110105 4# # # #               | 0.0        |       | 10.3.7.54          |                        |
| CHOICE Allocation confirmation | OP         |       | 1                  |                        |
| >PDSCH Confirmation            |            |       | Integer(1hi        |                        |
|                                |            |       | PDSCHident         |                        |
| DUOQUIO (; ;                   |            |       | ities)             |                        |
| >PUSCH Confirmation            |            |       | Integer(1hi        |                        |
|                                |            |       | PUSCHident         |                        |
|                                |            |       | ities)             | 5 ( ) 5 ( ) 5          |
| Protocol error indicator       | MD         |       | Protocol           | Default value is FALSE |
|                                |            |       | error              |                        |
|                                |            |       | indicator          |                        |
|                                |            |       | 10.3.3.27          |                        |

| Information Element/Group  | Need       | Multi | Type and    | Semantics description |
|----------------------------|------------|-------|-------------|-----------------------|
| name                       |            |       | reference   |                       |
| Protocol error information | CV-ProtErr |       | Protocol    |                       |
|                            |            |       | error       |                       |
|                            |            |       | information |                       |
|                            |            |       | 10.3.8.12   |                       |

| Condition | Explanation  |
|-----------|--|
| ProtErr   | This IE is mandatory present if the IE "Protocol error |
|           | indicator" has the value TRUE. Otherwise it is not     |
|           | needed.  |

#### 10.2.27 RADIO BEARER RECONFIGURATION

This message is sent from UTRAN to reconfigure parameters related to a change of QoS or to release and setup a radio bearer used for ptp transmission of MBMS services of the broadcast type. This procedure can also change the multiplexing of MAC, reconfigure transport channels and physical channels. This message is also used to perform a handover from GERAN *Iu mode* to UTRAN.

RLC-SAP: AM or UM or sent through GERAN Iu mode

Logical channel: DCCH or sent through GERAN Iu mode

Direction: UTRAN  $\rightarrow$  UE

| Information Element/Group name | Need | Multi | Type and reference                                | Semantics<br>description   | Version |
|--------------------------------|------|-------|---|--|---------|
| Message Type                   | MP   |       | Message<br>Type                                   |  |         |
| UE Information elements        |      |       | ,   |  |         |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36     |  |         |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16              |  |         |
| Integrity protection mode info | OP   |       | Integrity<br>protection<br>mode info<br>10.3.3.19 | The UTRAN should not include this IE unless it is performing an SRNS relocation or a handover from GERAN <i>Iu mode</i>  |         |
| Ciphering mode info            | OP   |       | Ciphering<br>mode info<br>10.3.3.5                | The UTRAN should not include this IE unless it is performing either an SRNS relocation or a handover from GERAN <i>Iu mode</i> and a change in ciphering algorithm |         |
| Activation time                | MD   |       | Activation time 10.3.3.1                          | Default value is "now"   |         |
| Delay restriction flag         | OP   |       | Enumerated<br>(TRUE)                              | This IE is always set to TRUE and included if the activation time is restricted according to   | REL-6   |

| Information Element/Group name                                   |                     |                             | Semantics description                                 | Version  |       |
|--|---------------------|-----------------------------|---|--|-------|
|  |                     |                             |   | subclause 8.6.3.1  |       |
| New U-RNTI   | OP                  |                             | U-RNTI<br>10.3.3.47                                   |  |       |
| New C-RNTI   | OP                  |                             | C-RNTI  |  |       |
| New DSCH-RNTI  | OP                  |                             | 10.3.3.8<br>DSCH-RNTI<br>10.3.3.9a                    | Should not be set<br>in FDD. If<br>received The UE<br>should ignore it   |       |
| New H-RNTI   | OP                  |                             | H-RNTI<br>10.3.3.14a                                  | onodia ignore it   | REL-5 |
| New Primary E-RNTI   | OP                  |                             | E-RNTI<br>10.3.3.10a                                  |  | REL-6 |
| New Secondary E-RNTI   | OP                  |                             | E-RNTI  | FDD only   | REL-6 |
| RRC State Indicator  | MP                  |                             | 10.3.3.10a<br>RRC State<br>Indicator<br>10.3.3.35a    |  |       |
| UE Mobility State Indicator                                      | CV-<br>FACH_PC<br>H |                             | Enumerated<br>(High-<br>mobilityDete<br>cted)         | Absence of this IE implies that, according to [4], the UE shall consider itself being in the mobility state the UE has maintained in CELL_DCH state or being not in high mobility state after the state transition, if applicable. | REL-7 |
| UTRAN DRX cycle length coefficient                               | OP                  |                             | UTRAN DRX<br>cycle length<br>coefficient<br>10.3.3.49 |  |       |
| CN information elements  |                     |                             |   |  |       |
| CN Information info  | OP                  |                             | CN<br>Information<br>info 10.3.1.3                    |  |       |
| UTRAN mobility information elements                              |                     |                             |   |  |       |
| URA identity   | OP                  |                             | URA identity<br>10.3.2.6                              |  |       |
| RNC support for change of UE capability                          | OP                  |                             | Boolean   | Should be included if the message is used to perform an SRNS relocation  | REL-7 |
| Reconfiguration in response to requested change of UE capability | OP                  |                             | Enumerated (TRUE)                                     |  | REL-7 |
| CHOICE specification mode >Complete specification                | MP                  |                             |   |  | REL-5 |
| RB information elements  | +                   |                             |   |  |       |
| >>RAB information to reconfigure list                            | OP                  | 1 to <<br>maxRABse<br>tup > |   |  |       |
| >>>RAB information to reconfigure                                | MP                  | tup /                       | RAB information to reconfigure 10.3.4.11              |  |       |

| Information Element/Group name   | Need | Multi                                       | Type and reference   | Semantics description  | Version |
|--|------|---|--|--|---------|
| >>RAB information for MBMS ptp bearer list   | OP   | 1 to <<br>maxMBMS<br>servSelect<br>>        |  |  | REL-6   |
| >>>RAB information for MBMS ptp bearer   | MP   |   | RAB<br>information<br>for MBMS<br>ptp bearer<br>10.3.4.9a                                      |  | REL-6   |
| >>RB information to reconfigure list   | MP   | 1to<br><maxrb></maxrb>                      |  | Although this IE is<br>not always<br>required, need is<br>MP to align with<br>ASN.1          |         |
|  | OP   |   |  |  | REL-4   |
| >>>RB information to reconfigure   | MP   |   | RB information to reconfigure 10.3.4.18  |  |         |
| >>RB information to be affected list   | OP   | 1 to<br><maxrb></maxrb>                     |  |  |         |
| >>>RB information to be affected   | MP   |   | RB information to be affected 10.3.4.17  |  |         |
| >>RB with PDCP context relocation info list  | OP   | 1 to<br><maxrball<br>RABs&gt;</maxrball<br> |  | This IE is needed<br>for each RB<br>having PDCP and<br>performing PDCP<br>context relocation | REL-5   |
| >>>PDCP context relocation info  | MP   |   | PDCP<br>context<br>relocation<br>info<br>10.3.4.1a   |  | REL-5   |
| >>PDCP ROHC target mode  | OP   |   | PDCP<br>ROHC target<br>mode<br>10.3.4.2a   |  | REL-5   |
| TrCH Information Elements  |      |   |  |  |         |
| Vplink transport channels     >>UL Transport channel     information common for all     transport channels | OP   |   | UL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.24 |  |         |
| >>Deleted TrCH information list  | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br>       |  |  |         |
| >>>Deleted UL TrCH information   | MP   |   | Deleted UL<br>TrCH<br>information<br>10.3.5.5  |  |         |
| >>Added or Reconfigured TrCH information list  | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br>       |  |  |         |
| >>>Added or Reconfigured UL<br>TrCH information  | MP   |   | Added or<br>Reconfigure<br>d UL TrCH<br>information<br>10.3.5.2                                |  |         |
| Downlink transport channels  |      |   | ]  |  |         |

| Information Element/Group name                                       | Need | Multi                                 | Type and reference  | Semantics description  | Version |
|--|------|---------------------------------------|---|--|---------|
| >>DL Transport channel information common for all transport channels | OP   |                                       | DL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.6 |  |         |
| >>Deleted TrCH information list                                      | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |   |  |         |
| >>>Deleted DL TrCH information                                       | MP   |                                       | Deleted DL<br>TrCH<br>information<br>10.3.5.4   |  |         |
| >>Added or Reconfigured TrCH information list                        | OP   | 1 to<br><maxtrch></maxtrch>           |   |  |         |
| >>>Added or Reconfigured DL<br>TrCH information                      | MP   |                                       | Added or<br>Reconfigure<br>d DL TrCH<br>information<br>10.3.5.1                               |  |         |
| >Preconfiguration  |      |                                       |   |  | REL-5   |
| >>CHOICE Preconfiguration mode                                       | MP   |                                       |   | This value only applies in case the message is sent through GERAN <i>Iu mode</i>                   |         |
| >>>Predefined configuration identity                                 | MP   |                                       | Predefined configuration identity 10.3.4.5  |  |         |
| >>>Default configuration   |      |                                       |   |  |         |
| >>>Default configuration mode  | MP   |                                       | Enumerated<br>(FDD, TDD)  | Indicates whether<br>the FDD or TDD<br>version of the<br>default<br>configuration shall<br>be used |         |
| >>>>Default configuration identity                                   | MP   |                                       | Default<br>configuration<br>identity<br>10.3.4.0  |  |         |
| PhyCH information elements   | 0.5  |                                       |   |  |         |
| Frequency info   | OP   |                                       | Frequency<br>info<br>10.3.6.36  |  |         |
| Multi-frequency Info   | OP   |                                       | Multi-<br>frequency<br>Info<br>10.3.6.39a   | This IE is used for<br>1.28 Mcps TDD<br>only   | REL-7   |
| DTX-DRX timing information   | OP   |                                       | DTX-DRX<br>timing<br>information<br>10.3.6.34b  |  | REL-7   |
| DTX-DRX Information  | OP   |                                       | DTX-DRX<br>Information<br>10.3.6.34a  |  | REL-7   |
| HS-SCCH less Information   | OP   |                                       | HS-SCCH<br>less<br>Information<br>10.3.6.36ab   |  | REL-7   |
| MIMO parameters  | OP   |                                       | MIMO<br>parameters<br>10.3.6.41a  |  | REL-7   |
| Uplink radio resources   |      |                                       |   |  |         |

| Information Element/Group name                          | Need | Multi                   | Type and reference   | Semantics description   | Version |
|---|------|-------------------------|--|---|---------|
| Maximum allowed UL TX power                             | MD   |                         | Maximum<br>allowed UL<br>TX power<br>10.3.6.39                 |   |         |
| Uplink DPCH info  | OP   |                         | Uplink<br>DPCH info<br>10.3.6.88                               |   |         |
| E-DCH Info  | OP   |                         | E-DCH Info<br>10.3.6.97  |   | REL-6   |
| Downlink radio resources  Downlink HS-PDSCH Information | OP   |                         | Downlink<br>HS-PDSCH<br>Information<br>10.3.6.23a              |   | REL-5   |
| Downlink information common for all radio links         | OP   |                         | Downlink information common for all radio links 10.3.6.24      |   |         |
| Downlink information per radio link list                | MP   | 1 to<br><maxrl></maxrl> |  | Although this IE is<br>not always<br>required, need is<br>MP to align with<br>ASN.1 |         |
|   | OP   |                         |  |   | REL-4   |
| >Downlink information for each radio link               | MP   |                         | Downlink<br>information<br>for each<br>radio link<br>10.3.6.27 |   |         |
| MBMS PL Service Restriction Information                 | OP   |                         | Enumerated (TRUE)  |   | REL-6   |

| Condition | Explanation   |
|-----------|---|
| FACH_PCH  | This IE is mandatory default when a transition from |
|           | CELL_DCH to CELL_FACH, URA_PCH or                   |
|           | CELL_PCH is requested by the message and is not     |
|           | needed otherwise.                                   |

# 10.2.28 RADIO BEARER RECONFIGURATION COMPLETE

This message is sent from the UE when a RB and signalling link reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

| Information Element/Group name              | Need | Multi | Type and reference                            | Semantics description | Version |
|---|------|-------|---|-----------------------|---------|
| Message Type                                | MP   |       | Message<br>Type                               |                       |         |
| UE information elements                     |      |       |   |                       |         |
| RRC transaction identifier                  | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36 |                       |         |
| Integrity check info                        | СН   |       | Integrity<br>check info<br>10.3.3.16          |                       |         |
| Uplink integrity protection activation info | OP   |       | Integrity protection                          |                       |         |

| Information Element/Group name       | Need | Multi                                       | Type and reference                          | Semantics description   | Version |
|--------------------------------------|------|---|---|---|---------|
|                                      |      |   | activation<br>info<br>10.3.3.17             |   |         |
| CHOICE mode                          | MP   |   |   |   |         |
| >FDD                                 |      |   |   | (no data)   |         |
| >TDD                                 |      |   |   |   |         |
| >>CHOICE TDD option                  | MP   |   |   |   | REL-4   |
| >>>3.84 Mcps TDD                     |      |   |   |   | REL-4   |
| >>>>Uplink Timing Advance            | OP   |   | Uplink<br>Timing<br>Advance<br>10.3.6.95    |   |         |
| >>>Extended Uplink Timing Advance    | OP   |   | Extended Uplink Timing Advance 10.3.6.95a   |   | REL-7   |
| >>>7.68 Mcps TDD                     |      |   |   |   | REL-7   |
| >>>Extended Uplink Timing Advance    | OP   |   | Extended Uplink Timing Advance 10.3.6.95a   |   | REL-7   |
| >>>1.28 Mcps TDD                     |      |   |   | (no data)   | REL-4   |
| Other Information elements           |      |   |   |   | REL-7   |
| Deferred measurement control reading | MD   |   | Enumerated<br>(TRUE)                        | Indicates the UE has not read SIB11, SIB11bis and SIB12, if available. Default value is FALSE | REL-7   |
| RB Information elements              |      |   |   |   |         |
| COUNT-C activation time              | OP   |   | Activation time 10.3.3.1                    | Used for radio bearers mapped on RLC-TM.  |         |
| Uplink counter synchronisation info  | OP   |   |   |   |         |
| >RB with PDCP information list       | OP   | 1 to<br><maxrball<br>RABs&gt;</maxrball<br> |   |   |         |
| >>RB with PDCP information           | MP   |   | RB with<br>PDCP<br>information<br>10.3.4.22 |   |         |
| >START list                          | MP   | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br>  |   | START [40]<br>values for all CN<br>domains.   |         |
| >>CN domain identity                 | MP   |   | CN domain identity 10.3.1.1                 |   |         |
| >>START                              | MP   |   | START<br>10.3.3.38                          | START value to be used in this CN domain.   |         |

# 10.2.29 RADIO BEARER RECONFIGURATION FAILURE

This message is sent by UE if the configuration given by UTRAN is unacceptable or if the UE failed to establish the physical channel(s).

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group  | Need | Multi           | Type and     | Semantics description |
|----------------------------|------|-----------------|--------------|-----------------------|
| name                       |      |                 | reference    |                       |
| Message Type               | MP   |                 | Message      |                       |
|                            |      |                 | Type         |                       |
| UE information elements    |      |                 |              |                       |
| RRC transaction identifier | MP   |                 | RRC          |                       |
|                            |      |                 | transaction  |                       |
|                            |      |                 | identifier   |                       |
|                            |      |                 | 10.3.3.36    |                       |
| Integrity check info       | CH   |                 | Integrity    |                       |
|                            |      |                 | check info   |                       |
|                            |      |                 | 10.3.3.16    |                       |
| Failure cause              | MP   |                 | Failure      |                       |
|                            |      |                 | cause and    |                       |
|                            |      |                 | error        |                       |
|                            |      |                 | information  |                       |
|                            |      |                 | 10.3.3.14    |                       |
| RB information elements    |      |                 |              |                       |
| Radio bearers for which    | OP   | 1 to            |              |                       |
| reconfiguration would have |      | <maxrb></maxrb> |              |                       |
| succeeded List             |      |                 |              |                       |
| >Radio bearer for which    | MP   |                 | RB identity, |                       |
| reconfiguration would have |      |                 | 10.3.4.16    |                       |
| succeeded                  |      |                 |              |                       |

#### 10.2.30 RADIO BEARER RELEASE

This message is used by UTRAN to release a radio bearer. It can also include modifications to the configurations of transport channels and/or physical channels. It can simultaneously indicate release of a signalling connection when UE is connected to more than one CN domain.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN  $\rightarrow$  UE

| Information Element/Group name | Need | Multi | Type and reference                                | Semantics description  | Version |
|--------------------------------|------|-------|---|--|---------|
| Message Type                   | MP   |       | Message<br>Type                                   |  |         |
| UE Information Elements        |      |       |   |  |         |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36     |  |         |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16              |  |         |
| Integrity protection mode info | OP   |       | Integrity<br>protection<br>mode info<br>10.3.3.19 | The UTRAN should not include this IE unless it is performing an SRNS relocation.                                     |         |
| Ciphering mode info            | OP   |       | Ciphering<br>mode info<br>10.3.3.5                | The UTRAN should not include this IE unless it is performing an SRNS relocation and a change in ciphering algorithm. |         |
| Activation time                | MD   |       | Activation time 10.3.3.1                          | Default value is "now"   |         |
| New U-RNTI                     | OP   |       | U-RNTI<br>10.3.3.47                               |  |         |
| New C-RNTI                     | OP   |       | C-RNTI  |  |         |

| Information Element/Group name           | Need                | Multi                       | Type and reference                                    | Semantics description  | Version |
|--|---------------------|-----------------------------|---|--|---------|
|  |                     |                             | 10.3.3.8  |  |         |
| New DSCH-RNTI                            | OP                  |                             | DSCH-RNTI<br>10.3.3.9a                                | Should not be set in FDD. If received the UE should ignore it  |         |
| New H-RNTI                               | OP                  |                             | H-RNTI<br>10.3.3.14a                                  |  | REL-5   |
| New Primary E-RNTI                       | OP                  |                             | E-RNTI<br>10.3.3.10a                                  |  | REL-6   |
| New Secondary E-RNTI                     | OP                  |                             | E-RNTI<br>10.3.3.10a                                  | FDD only   | REL-6   |
| RRC State Indicator                      | MP                  |                             | RRC State<br>Indicator<br>10.3.3.35a                  |  |         |
| UE Mobility State Indicator              | CV-<br>FACH_PC<br>H |                             | Enumerated<br>(High-<br>mobilityDete<br>cted          | Absence of this IE implies that, according to [4], the UE shall consider itself being in the mobility state the UE has maintained in CELL_DCH state or being not in high mobility state after the state transition, if applicable. | REL-7   |
| UTRAN DRX cycle length coefficient       | OP                  |                             | UTRAN DRX<br>cycle length<br>coefficient<br>10.3.3.49 |  |         |
| CN Information Elements                  |                     |                             |   |  |         |
| CN Information info                      | OP                  |                             | CN<br>Information<br>info 10.3.1.3                    |  |         |
| Signalling Connection release indication | OP                  |                             | CN domain identity 10.3.1.1                           |  |         |
| UTRAN mobility information elements      |                     |                             |   |  |         |
| URA identity                             | OP                  |                             | URA identity<br>10.3.2.6                              |  |         |
| RNC support for change of UE capability  | OP                  |                             | Boolean   | Should be included if the message is used to perform an SRNS relocation  | REL-7   |
| RB Information Elements                  |                     |                             |   |  |         |
| RAB information to reconfigure list      | OP                  | 1 to <<br>maxRABse<br>tup > |   |  |         |
| >RAB information to reconfigure          | MP                  | ·                           | RAB information to reconfigure 10.3.4.11              |  |         |
| RB information to release list           | MP                  | 1 to<br><maxrb></maxrb>     |   |  |         |
| >RB information to release               | MP                  |                             | RB<br>information<br>to release<br>10.3.4.19          |  |         |
| RB information to reconfigure list       | OP                  | 1to<br><maxrb></maxrb>      | 10.0.7.10   |  | REL-6   |
| >RB information to reconfigure           | MP                  |                             | RB information to reconfigure 10.3.4.18               |  | REL-6   |
| RB information to be affected list       | OP                  | 1 to<br><maxrb></maxrb>     | _   |  |         |
| >RB information to be affected           | MP                  |                             | RB information  |  |         |

| Information Element/Group name                                     | Need     | Multi  | Type and reference   | Semantics description   | Version        |
|--|----------|--|--|---|----------------|
|  |          |  | to be affected 10.3.4.17   |   |                |
| Downlink counter synchronisation info                              | ОР       |  | 10.3.4.17  |   |                |
| >RB with PDCP information list                                     | OP       | 1 to<br><maxrball<br>RABs&gt;</maxrball<br>                            |  |   |                |
| >>RB with PDCP information   | MP       |  | RB with<br>PDCP<br>information<br>10.3.4.22  | This IE is needed for each RB having PDCP in the case of lossless SRNS relocation |                |
| >RB with PDCP context relocation info list                         | OP<br>OP | 1 to<br><maxrball<br>RABs&gt;</maxrball<br>                            |  |   | REL-5<br>REL-5 |
| >>PDCP context relocation info                                     | MP       | NABS2  | PDCP<br>context<br>relocation<br>info<br>10.3.4.1a   | This IE is needed for each RB having PDCP and performing PDCP context relocation  | REL-5          |
| TrCH Information Elements  |          |  |  |   |                |
| Uplink transport channels  | OD       | -  | 10 T   |   |                |
| UL Transport channel information common for all transport channels | OP       |  | UL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.24 |   |                |
| Deleted TrCH information list                                      | OP       | 1 to<br><maxtrch<br>&gt;</maxtrch<br>                                  |  |   |                |
| >Deleted UL TrCH information                                       | MP       |  | Deleted UL<br>TrCH<br>information<br>10.3.5.5  |   |                |
| Added or Reconfigured TrCH information list                        | OP       | 1 to<br><maxtrch< td=""><td>10.0.0.0</td><td></td><td></td></maxtrch<> | 10.0.0.0   |   |                |
| >Added or Reconfigured UL<br>TrCH information                      | MP       |  | Added or<br>Reconfigure<br>d UL TrCH<br>information<br>10.3.5.2                                |   |                |
| Downlink transport channels  |          |  |  |   |                |
| DL Transport channel information common for all transport channels | OP       |  | DL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.6  |   |                |
| Deleted TrCH information list                                      | OP       | 1 to<br><maxtrch></maxtrch>  |  |   |                |
| >Deleted DL TrCH information                                       | MP       |  | Deleted DL<br>TrCH<br>information<br>10.3.5.4  |   |                |
| Added or Reconfigured TrCH information list                        | OP       | 1 to<br><maxtrch<br>&gt;</maxtrch<br>                                  |  |   |                |
| >Added or Reconfigured DL<br>TrCH information                      | MP       |  | Added or<br>Reconfigure  |   |                |

| Information Element/Group name          | Need | Multi           | Type and reference     | Semantics description         | Version |
|---|------|-----------------|------------------------|-------------------------------|---------|
|   |      |                 | d DL TrCH              |                               |         |
|   |      |                 | information            |                               |         |
|   |      |                 | 10.3.5.1               |                               |         |
| PhyCH information elements              |      |                 |                        |                               |         |
| Frequency info                          | OP   |                 | Frequency              |                               |         |
|   |      |                 | info                   |                               |         |
|   |      |                 | 10.3.6.36              |                               |         |
| Multi-frequency Info                    | OP   |                 | Multi-                 | This IE is used for 1.28 Mcps | REL-7   |
|   |      |                 | frequency              | TDD only                      |         |
|   |      |                 | Info                   |                               |         |
|   |      |                 | 10.3.6.39a             |                               |         |
| DTX-DRX timing information              | OP   |                 | DTX-DRX                |                               | REL-7   |
|   |      |                 | timing                 |                               |         |
|   |      |                 | information            |                               |         |
| DTX-DRX Information                     | OP   |                 | 10.3.6.34b             |                               | REL-7   |
| DTX-DRX Information                     | UP   |                 | DTX-DRX<br>Information |                               | REL-/   |
|   |      |                 | 10.3.6.34a             |                               |         |
| HS-SCCH less Information                | OP   |                 | HS-SCCH                |                               | REL-7   |
| 1.0 00011 1633 IIIIOIIIIalioii          | ] ~  |                 | less                   |                               | INEL-1  |
|   |      |                 | Information            |                               |         |
|   |      |                 | 10.3.6.36ab            |                               |         |
| MIMO parameters                         | OP   |                 | MIMO                   |                               | REL-7   |
| The parameters                          |      |                 | parameters             |                               |         |
|   |      |                 | 10.3.6.41a             |                               |         |
| Uplink radio resources                  |      |                 |                        |                               |         |
| Maximum allowed UL TX power             | MD   |                 | Maximum                | Default value is the existing |         |
|   |      |                 | allowed UL             | maximum UL TX power           |         |
|   |      |                 | TX power               |                               |         |
|   |      |                 | 10.3.6.39              |                               |         |
| Uplink DPCH info                        | OP   |                 | Uplink                 |                               |         |
|   |      |                 | DPCH info              |                               |         |
|   | L    |                 | 10.3.6.88              |                               |         |
| E-DCH Info                              | OP   |                 | E-DCH Info             |                               | REL-6   |
| Downlink radio resources                |      |                 | 10.3.6.97              |                               |         |
| Downlink HS-PDSCH                       | OP   |                 | Downlink               |                               | REL-5   |
| Information                             | OF   |                 | HS-PDSCH               |                               | KEL-5   |
| inionnation                             |      |                 | Information            |                               |         |
|   |      |                 | 10.3.6.23a             |                               |         |
| Downlink information common             | OP   |                 | Downlink               |                               |         |
| for all radio links                     | ] .  |                 | information            |                               |         |
|   |      |                 | common for             |                               |         |
|   |      |                 | all radio links        |                               |         |
|   |      |                 | 10.3.6.24              |                               |         |
| Downlink information per radio          | OP   | 1 to            |                        | Send downlink information for |         |
| link list                               |      | <maxrl></maxrl> |                        | each radio link to be set-up  |         |
| >Downlink information for each          | MP   |                 | Downlink               |                               |         |
| radio link                              |      |                 | information            |                               |         |
|   |      |                 | for each               |                               |         |
|   |      |                 | radio link             |                               |         |
| MRMS DI Santino Destriction             | OP   |                 | 10.3.6.27              |                               | REL-6   |
| MBMS PL Service Restriction Information | 05   |                 | Enumerated (TRUE)      |                               | KEL-0   |
| MBMS RB list released to                | OP   | 1 to            | (TRUE)                 |                               | REL-6   |
| change transfer mode                    |      | <maxrb></maxrb> |                        |                               | 112-0   |
| >RB information to release              | MP   | SITIONIND?      | RB                     |                               | REL-6   |
|   | 1    |                 | information            |                               |         |
|   |      |                 | to release             |                               |         |
|   |      |                 | 10.3.4.19              |                               |         |
|   |      |                 |                        |                               |         |

| Condition | Explanation   |
|-----------|---|
| FACH_PCH  | This IE is mandatory default when a transition from                               |
|           | CELL_DCH to CELL_FACH, URA_PCH or CELL PCH is requested by the message and is not |
|           | needed otherwise.   |

#### 10.2.31 RADIO BEARER RELEASE COMPLETE

This message is sent from the UE when radio bearer release has been completed.

RLC-SAP: AM

Logical channel: DCCH

| Information Element/Group name              | Need | Multi | Type and reference                                    | Semantics description  | Version |
|---|------|-------|---|--|---------|
| Message Type                                | MP   |       | Message<br>Type                                       |  |         |
| UE information elements                     |      |       | . , , , ,   |  |         |
| RRC transaction identifier                  | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36         |  |         |
| Integrity check info                        | СН   |       | Integrity<br>check info<br>10.3.3.16                  | Integrity check<br>info is included if<br>integrity protection<br>is applied   |         |
| Uplink integrity protection activation info | OP   |       | Integrity protection activation info 10.3.3.17        |  |         |
| CHOICE mode                                 | MP   |       |   |  |         |
| >FDD  |      |       |   | (no data)  |         |
| >TDD  |      |       |   |  |         |
| >>CHOICE TDD option                         | MP   |       |   |  | REL-4   |
| >>>3.84 Mcps TDD                            |      |       |   |  | REL-4   |
| >>>>Uplink Timing Advance                   | OP   |       | Uplink<br>Timing<br>Advance<br>10.3.6.95              | This information element shall be present in case of handover procedure if timing advance is enabled. Calculated timing advance value for the new cell after handover in a synchronous TDD network | DEI 7   |
| >>>>Extended Uplink Timing Advance          | OP   |       | Extended Uplink Timing Advance 10.3.6.95a             |  | REL-7   |
| >>>7.68 Mcps TDD                            |      |       |   |  | REL-7   |
| >>>Extended Uplink Timing Advance           | OP   |       | Extended<br>Uplink<br>Timing<br>Advance<br>10.3.6.95a | This information element shall be present in case of handover procedure if timing advance is enabled. Calculated timing  | REL-7   |

| Information Element/Group name        | Need | Multi  | Type and reference | Semantics description           | Version |
|---------------------------------------|------|--|--------------------|---------------------------------|---------|
| name                                  |      |  | TOTOTOTO           | advance value for               |         |
|                                       |      |  |                    | the new cell after              |         |
|                                       |      |  |                    | handover in a                   |         |
|                                       |      |  |                    | synchronous TDD                 |         |
|                                       |      |  |                    | network                         |         |
| >>>1.28 Mcps TDD                      |      |  |                    | (no data)                       | REL-4   |
| Other Information elements            |      |  |                    | ( data)                         | REL-7   |
| Deferred measurement control          | MD   |  | Enumerated         | Indicates the UE                | REL-7   |
| reading                               |      |  | (TRUE)             | has not read                    |         |
| · · · · · · · · · · · · · · · · · · · |      |  | ( ,                | SIB11, SIB11bis                 |         |
|                                       |      |  |                    | and SIB12, if                   |         |
|                                       |      |  |                    | available.                      |         |
|                                       |      |  |                    | Default value is                |         |
|                                       |      |  |                    | FALSE                           |         |
| RB Information elements               |      |  |                    |                                 |         |
| COUNT-C activation time               | OP   |  | Activation         | Used for radio                  |         |
|                                       |      |  | time               | bearers mapped                  |         |
|                                       |      |  | 10.3.3.1           | on RLC-TM.                      |         |
| Uplink counter synchronisation        | OP   |  |                    |                                 |         |
| info                                  |      |  |                    |                                 |         |
| >RB with PDCP information list        | OP   | 1 to   |                    | This IE is needed               |         |
|                                       |      | <maxrball< td=""><td></td><td>for each RB</td><td></td></maxrball<>                            |                    | for each RB                     |         |
|                                       |      | RABs>  |                    | having PDCP in                  |         |
|                                       |      |  |                    | the case of                     |         |
|                                       |      |  |                    | lossless SRNS                   |         |
|                                       | L    |  |                    | relocation                      |         |
| >>RB with PDCP information            | MP   |  | RB with            |                                 |         |
|                                       |      |  | PDCP information   |                                 |         |
|                                       |      |  |                    |                                 |         |
| >START list                           | MP   | 1 to   | 10.3.4.22          | CTADT [40]                      |         |
| >STAKT IIST                           | IVIP | 1 to<br><maxcndo< td=""><td></td><td>START [40]<br/>values for all CN</td><td></td></maxcndo<> |                    | START [40]<br>values for all CN |         |
|                                       |      |  |                    | domains.                        |         |
| >>CN domain identity                  | MP   | mains>   | CN domain          | domains.                        |         |
| >>ON domain identity                  | IVIP |  | identity           |                                 |         |
|                                       |      |  | 10.3.1.1           |                                 |         |
| >>START                               | MP   |  | START              | START value to                  |         |
|                                       | IVIE |  | 10.3.3.38          | be used in this CN              |         |
|                                       |      |  | 10.0.0.00          | domain.                         |         |
|                                       |      | 1  | 1                  | domain.                         | l       |

# 10.2.32 RADIO BEARER RELEASE FAILURE

This message is sent by UE if the configuration given by UTRAN is unacceptable or if radio bearer cannot be released.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group       | Need | Multi           | Type and     | Semantics description |
|---------------------------------|------|-----------------|--------------|-----------------------|
| name                            |      |                 | reference    |                       |
| Message Type                    | MP   |                 | Message      |                       |
|                                 |      |                 | Type         |                       |
| UE information elements         |      |                 |              |                       |
| RRC transaction identifier      | MP   |                 | RRC          |                       |
|                                 |      |                 | transaction  |                       |
|                                 |      |                 | identifier   |                       |
|                                 |      |                 | 10.3.3.36    |                       |
| Integrity check info            | CH   |                 | Integrity    |                       |
|                                 |      |                 | check info   |                       |
|                                 |      |                 | 10.3.3.16    |                       |
| Failure cause                   | MP   |                 | Failure      |                       |
|                                 |      |                 | cause and    |                       |
|                                 |      |                 | error        |                       |
|                                 |      |                 | information  |                       |
|                                 |      |                 | 10.3.3.14    |                       |
| RB information elements         |      |                 |              |                       |
| Radio bearers for which         | OP   | 1 to            |              |                       |
| reconfiguration would have      |      | <maxrb></maxrb> |              |                       |
| succeeded                       |      |                 |              |                       |
| >Radio bearer for which         | MP   |                 | RB identity, |                       |
| reconfiguration would have been |      |                 | 10.3.4.16    |                       |
| succeeded                       |      |                 |              |                       |

## 10.2.33 RADIO BEARER SETUP

This message is sent by UTRAN to the UE to establish new radio bearer(s). It can also include modifications to the configurations of transport channels and/or physical channels.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN  $\rightarrow$  UE

| Information Element/Group name | Need | Multi | Type and reference                                | Semantics description   | Version |
|--------------------------------|------|-------|---|---|---------|
| Message Type                   | MP   |       | Message<br>Type                                   | •   |         |
| UE Information Elements        |      |       |   |   |         |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36     |   |         |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16              |   |         |
| Integrity protection mode info | OP   |       | Integrity<br>protection<br>mode info<br>10.3.3.19 | The UTRAN<br>should not include<br>this IE unless it is<br>performing an<br>SRNS relocation                         |         |
| Ciphering mode info            | OP   |       | Ciphering<br>mode info<br>10.3.3.5                | The UTRAN should not include this IE unless it is performing an SRNS relocation and a change in ciphering algorithm |         |
| Activation time                | MD   |       | Activation time 10.3.3.1                          | Default value is<br>"now"   |         |
| New U-RNTI                     | OP   |       | U-RNTI<br>10.3.3.47                               |   |         |

| Information Element/Group name            | Need | Multi                                     | Type and reference                                       | Semantics description   | Version |
|---|------|---|--|---|---------|
| New C-RNTI                                | OP   |   | C-RNTI<br>10.3.3.8                                       |   |         |
| New DSCH-RNTI                             | OP   |   | DSCH-RNTI<br>10.3.3.9a                                   | Should not be set<br>in FDD. If<br>received the UE<br>should ignore it  |         |
| New H-RNTI                                | OP   |   | H-RNTI<br>10.3.3.14a                                     | onedia ignere i   | REL-5   |
| New Primary E-RNTI                        | OP   |   | E-RNTI<br>10.3.3.10a                                     |   | REL-6   |
| New Secondary E-RNTI                      | OP   |   | E-RNTI<br>10.3.3.10a                                     | FDD only  | REL-6   |
| RRC State Indicator                       | MP   |   | RRC State<br>Indicator<br>10.3.3.35a                     |   |         |
| UTRAN DRX cycle length coefficient        | OP   |   | UTRAN DRX<br>cycle length<br>coefficient<br>10.3.3.49    |   |         |
| CN Information Elements                   |      |   |  |   |         |
| CN Information info                       | OP   |   | CN<br>Information<br>info 10.3.1.3                       |   |         |
| UTRAN mobility information elements       |      |   |  |   |         |
| URA identity                              | OP   |   | URA identity<br>10.3.2.6                                 |   |         |
| RNC support for change of UE capability   | OP   |   | Boolean  | Should be included if the message is used to perform an SRNS relocation | REL-7   |
| RB Information Elements                   |      |   |  |   |         |
| CHOICE specification mode                 | MP   |   |  | In this version of  | REL-6   |
| >Complete specification                   |      |   |  | the specification,<br>only this value is<br>specified                   | REL-6   |
| >>Signalling RB information to setup list | OP   | 1 to<br><maxsrbs<br>etup&gt;</maxsrbs<br> |  | For each signalling radio bearer established                            |         |
| >>>Signalling RB information to setup     | MP   |   | Signalling<br>RB<br>information<br>to setup<br>10.3.4.24 |   |         |
| >>RAB information to setup list           | OP   | 1 to<br><maxrabs<br>etup&gt;</maxrabs<br> |  | For each RAB established  |         |
| >>>RAB information for setup              | MP   | ,   | RAB information for setup 10.3.4.10                      |   |         |
| >>RAB information to reconfigure list     | OP   | 1 to <<br>maxRABse<br>tup >               |  |   | REL-6   |
| >>>RAB information to reconfigure         | MP   |   | RAB information to reconfigure 10.3.4.11                 |   | REL-6   |
| >>RB information to reconfigure list      | OP   | 1to<br><maxrb></maxrb>                    |  |   | REL-6   |
| >>>RB information to reconfigure          | MP   |   | RB information   |   | REL-6   |

| Information Element/Group name  | Need | Multi  | Type and reference   | Semantics description  | Version |
|---|------|--|--|--|---------|
|   |      |  | to reconfigure 10.3.4.18   |  |         |
| >>RB information to be affected list  | ОР   | 1 to<br><maxrb></maxrb>  | 10.5.4.10  |  |         |
| >>>RB information to be affected  | MP   |  | RB information to be affected 10.3.4.17  |  |         |
| >>Downlink counter synchronisation info   | OP   |  |  |  |         |
| >>>RB with PDCP information list  | OP   | 1 to<br><maxrball<br>RABs&gt;</maxrball<br>                    |  |  |         |
| >>>RB with PDCP information   | MP   |  | RB with<br>PDCP<br>information<br>10.3.4.22  | This IE is needed<br>for each RB<br>having PDCP in<br>the case of<br>lossless SRNS<br>relocation |         |
|   | OP   |  |  |  | REL-5   |
| >>>PDCP context relocation info   | OP   |  | PDCP<br>context<br>relocation<br>info<br>10.3.4.1a   | This IE is needed<br>for each RB<br>having PDCP and<br>performing PDCP<br>context relocation     | REL-5   |
| >>PDCP ROHC target mode   | OP   |  | PDCP<br>ROHC target<br>mode<br>10.3.4.2a   |  | REL-5   |
| TrCH Information Elements   |      |  |  |  |         |
| Uplink transport channels   |      |  |  |  |         |
| >>UL Transport channel information common for all transport channels                              | OP   |  | UL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.24 |  |         |
| >>Deleted TrCH information list   | OP   | 1 to<br><maxtrch< td=""><td></td><td></td><td></td></maxtrch<> |  |  |         |
| >>>Deleted UL TrCH information  | MP   |  | Deleted UL<br>TrCH<br>information<br>10.3.5.5  |  |         |
| >>Added or Reconfigured TrCH information list   | OP   | 1 to<br><maxtrch></maxtrch>                                    |  |  |         |
| >>>Added or Reconfigured UL<br>TrCH information   | MP   |  | Added or<br>Reconfigure<br>d UL TrCH<br>information<br>10.3.5.2                                |  |         |
| >>Dunlink transport channels >>DL Transport channel information common for all transport channels | OP   |  | DL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.6  |  |         |
| >>Deleted TrCH information list   | OP   | 1 to<br><maxtrch< td=""><td></td><td></td><td></td></maxtrch<> |  |  |         |

| Information Element/Group name                  | Need | Multi                                 | Type and reference   | Semantics description                             | Version |
|---|------|---------------------------------------|--|---|---------|
| >>>Deleted DL TrCH information                  | MP   |                                       | Deleted DL<br>TrCH   | ,   |         |
|   |      |                                       | information 10.3.5.4   |   |         |
| >>Added or Reconfigured TrCH information list   | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |  |   |         |
| >>>Added or Reconfigured DL<br>TrCH information | MP   |                                       | Added or Reconfigure d DL TrCH information 10.3.5.1            |   |         |
| PhyCH information elements                      |      |                                       |  |   |         |
| Frequency info                                  | OP   |                                       | Frequency<br>info<br>10.3.6.36                                 |   |         |
| Multi-frequency Info                            | OP   |                                       | Multi-<br>frequency<br>Info<br>10.3.6.39a                      | This IE is used for 1.28 Mcps TDD only            | REL-7   |
| DTX-DRX timing information                      | OP   |                                       | DTX-DRX<br>timing<br>information<br>10.3.6.34b                 |   | REL-7   |
| DTX-DRX Information                             | OP   |                                       | DTX-DRX<br>Information<br>10.3.6.34a                           |   | REL-7   |
| HS-SCCH less Information                        | OP   |                                       | HS-SCCH<br>less<br>Information<br>10.3.6.36ab                  |   | REL-7   |
| MIMO parameters                                 | OP   |                                       | MIMO<br>parameters<br>10.3.6.41a                               |   | REL-7   |
| Uplink radio resources                          |      |                                       |  |   |         |
| Maximum allowed UL TX power                     | MD   |                                       | Maximum<br>allowed UL<br>TX power<br>10.3.6.39                 | Default value is the existing maximum UL TX power |         |
| Uplink DPCH info                                | OP   |                                       | Uplink<br>DPCH info<br>10.3.6.88                               |   |         |
| E-DCH Info                                      | OP   |                                       | E-DCH Info<br>10.3.6.97  |   | REL-6   |
| Downlink radio resources                        |      |                                       |  |   |         |
| Downlink HS-PDSCH<br>Information                | OP   |                                       | Downlink<br>HS-PDSCH<br>Information<br>10.3.6.23a              |   | REL-5   |
| Downlink information common for all radio links | OP   |                                       | Downlink information common for all radio links 10.3.6.24      |   |         |
| Downlink information per radio link list        | OP   | 1 to<br><maxrl></maxrl>               |  | Send downlink information for each radio link     |         |
| >Downlink information for each radio link       | MP   |                                       | Downlink<br>information<br>for each<br>radio link<br>10.3.6.27 |   |         |
| MBMS PL Service Restriction<br>Information      | OP   |                                       | Enumerated (TRUE)  |   | REL-6   |

# 10.2.34 RADIO BEARER SETUP COMPLETE

This message is sent by the UE to confirm the establishment of the radio bearer.

RLC-SAP: AM

Logical channel: DCCH Direction: UE  $\rightarrow$  UTRAN

| Information Element/Group name              | Need | Multi | Type and reference   | Semantics description  | Version |
|---|------|-------|--|--|---------|
| Message Type                                | MP   |       | Message<br>Type  | •  |         |
| UE information elements                     |      |       | 1777   |  |         |
| RRC transaction identifier                  | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36              |  |         |
| Integrity check info                        | СН   |       | Integrity<br>check info<br>10.3.3.16                       |  |         |
| Uplink integrity protection activation info | OP   |       | Integrity<br>protection<br>activation<br>info<br>10.3.3.17 |  |         |
| CHOICE mode                                 | OP   |       |  |  |         |
| >FDD  |      |       |  | (no data)  |         |
| >TDD  |      |       |  |  |         |
| >>CHOICE TDD option                         | MP   |       |  |  | REL-4   |
| >>>3.84 Mcps TDD                            |      |       |  |  | REL-4   |
| >>>>Uplink Timing Advance                   | OP   |       | Uplink Timing Advance 10.3.6.95                            | This information element shall be present in case of handover procedure if timing advance is enabled. Calculated timing advance value for the new cell after handover in a synchronous TDD network | REL-7   |
| >>>>Extended Uplink Timing Advance          | OP   |       | Uplink Timing Advance 10.3.6.95a                           |  |         |
| >>>7.68 Mcps TDD                            |      |       |  |  | REL-7   |
| >>>>Extended Uplink Timing Advance          | OP   |       | Extended<br>Uplink<br>Timing<br>Advance<br>10.3.6.95a      | This information element shall be present in case of handover procedure if timing advance is enabled. Calculated timing advance value for the new cell after handover in a synchronous TDD network | REL-7   |
| >>>1.28 Mcps TDD                            |      |       |  | (No data)  | REL-4   |
| START                                       | OP   |       | START<br>10.3.3.38   | This information element is not  |         |

| Information Element/Group name       | Need | Multi                                       | Type and reference                          | Semantics description   | Version |
|--------------------------------------|------|---|---|---|---------|
|                                      |      |   |   | needed for<br>transparent mode<br>RBs if prior to this<br>procedure there<br>exists one RB<br>using RLC-TM. |         |
| Other information elements           |      |   |   |   | REL-7   |
| Deferred measurement control reading | MD   |   | Enumerated<br>(TRUE)                        | Indicates the UE has not read SIB11, SIB11bis and SIB12, if available. Default value is FALSE               | REL-7   |
| RB Information elements              |      |   |   |   |         |
| COUNT-C activation time              | OP   |   | Activation time 10.3.3.1                    | Used for radio<br>bearers mapped<br>on RLC-TM.  |         |
| Uplink counter synchronisation info  | OP   |   |   |   |         |
| >RB with PDCP information list       | OP   | 1 to<br><maxrball<br>RABs&gt;</maxrball<br> |   | This IE is needed<br>for each RB<br>having PDCP in<br>the case of<br>lossless SRNS<br>relocation            |         |
| >>RB with PDCP information           | MP   |   | RB with<br>PDCP<br>information<br>10.3.4.22 |   |         |
| >START list                          | MP   | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br>  |   | START [40]<br>values for all CN<br>domains.   |         |
| >>CN domain identity                 | MP   |   | CN domain identity 10.3.1.1                 |   |         |
| >>START                              | MP   |   | START<br>10.3.3.38                          | START value to be used in this CN domain.   |         |

# 10.2.35 RADIO BEARER SETUP FAILURE

This message is sent by UE, if it does not support the configuration given by UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group name                               | Need | Multi                   | Type and reference  | Semantics description |
|--|------|-------------------------|---|-----------------------|
| Message Type   | MP   |                         | Message<br>Type   |                       |
| UE information elements                                      |      |                         |   |                       |
| RRC transaction identifier                                   | MP   |                         | RRC<br>transaction<br>identifier<br>10.3.3.36             |                       |
| Integrity check info   | CH   |                         | Integrity<br>check info<br>10.3.3.16                      |                       |
| Failure cause  | MP   |                         | Failure<br>cause and<br>error<br>information<br>10.3.3.14 |                       |
| RB information elements                                      |      |                         |   |                       |
| Radio bearers for which reconfiguration would have succeeded | OP   | 1 to<br><maxrb></maxrb> |   |                       |
| >Radio bearer for which reconfiguration would have succeeded | MP   |                         | RB identity,<br>10.3.4.16                                 |                       |

# 10.2.36 RRC CONNECTION REJECT

The network transmits this message when the requested RRC connection cannot be accepted.

RLC-SAP: UM

Logical channel: CCCH

Direction: UTRAN  $\rightarrow$  UE

| Information<br>Element/Group name | Need | Multi | Type and reference                             | Semantics description   | Version |
|-----------------------------------|------|-------|--|---|---------|
| Message Type                      | MP   |       | Message<br>Type                                |   |         |
| UE information elements           |      |       |  |   |         |
| RRC transaction identifier        | MP   |       | RRC<br>transactio<br>n identifier<br>10.3.3.36 |   |         |
| Initial UE identity               | MP   |       | Initial UE identity 10.3.3.15                  |   |         |
| Rejection cause                   | MP   |       | Rejection cause 10.3.3.31                      |   |         |
| Wait time                         | MP   |       | Wait time 10.3.3.50                            |   |         |
| Redirection info                  | OP   |       | Redirectio<br>n info<br>10.3.3.29              |   |         |
| Counting completion               | OP   |       | Enumerat<br>ed (TRUE)                          | This field may be present if the Rejection Cause is set to "unspecified" otherwise it shall be ignored. | REL-6   |

# 10.2.37 RRC CONNECTION RELEASE

This message is sent by UTRAN to release the RRC connection. The message also releases the signalling connection and all radio bearers between the UE and UTRAN.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

| Information<br>Element/Group name | Need                | Multi  | Type and reference                                | Semantics description  | Version |
|-----------------------------------|---------------------|--|---|--|---------|
| Message Type                      | MP                  |  | Message<br>Type                                   |  |         |
| UE information elements           |                     |  |   |  |         |
| CHOICE identity type              | CV-<br>CCCH         |  |   |  | REL-5   |
| >U-RNTI                           |                     |  | U-RNTI<br>10.3.3.47                               |  |         |
| > Group identity                  |                     | 1 to<br><maxur<br>NTIgrou<br/>p&gt;</maxur<br> |   |  | REL-5   |
| >>Group release information       | MP                  |  | Group release informatio n 10.3.3.14              |  | REL-5   |
| RRC transaction identifier        | MP                  |  | RRC<br>transactio<br>n<br>identifier<br>10.3.3.36 |  |         |
| Integrity check info              | CV-<br>DCCH         |  | Integrity<br>check info<br>10.3.3.16              | Integrity check info is included if integrity protection is applied  |         |
| N308                              | CH-<br>Cell_DC<br>H |  | Integer(1<br>8)                                   |  |         |
| Release cause                     | MP                  |  | Release<br>cause<br>10.3.3.32                     |  |         |
| UE Mobility State<br>Indicator    | CV-<br>DCCH_<br>MD  |  | Enumerat<br>ed (High-<br>mobilityD<br>etected)    | Absence of this IE implies that, according to [4] the UE shall consider itself being in the mobility state the UE has maintained in CELL_DCH state or being not in highmobility state when entering in Idle Mode, if applicable. | REL-7   |
| Other information elements        |                     |  |   |  |         |
| Rplmn information                 | OP                  |  | Rplmn<br>informatio<br>n<br>10.3.8.15             |  |         |
| Redirection info                  | OP                  |  | Redirecti<br>on info<br>10.3.3.2                  |  | REL-6   |

| Condition | Explanation  |  |  |
|-----------|--|--|--|
| CCCH      | This IE is mandatory present when CCCH is used and |  |  |
|           | not needed otherwise.                              |  |  |
| DCCH      | This IE is mandatory present when DCCH is used and |  |  |
|           | not needed otherwise.                              |  |  |
| DCCH_MD   | This IE is mandatory default when DCCH is used and |  |  |
|           | not needed otherwise.                              |  |  |
| Cell_DCH  | This IE is mandatory present when UE is in         |  |  |
|           | CELL_DCH state and not needed otherwise.           |  |  |

## 10.2.38 RRC CONNECTION RELEASE COMPLETE

This message is sent by UE to confirm that the RRC connection has been released.

RLC-SAP: AM or UM
Logical channel: DCCH

Direction: UE  $\rightarrow$  UTRAN

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Message Type                   | MP   |       | Message            |                       |
|                                |      |       | Type               |                       |
| UE information elements        |      |       |                    |                       |
| RRC transaction identifier     | MP   |       | RRC                |                       |
|                                |      |       | transaction        |                       |
|                                |      |       | identifier         |                       |
|                                |      |       | 10.3.3.36          |                       |
| Integrity check info           | CH   |       | Integrity          |                       |
|                                |      |       | check info         |                       |
|                                |      |       | 10.3.3.16          |                       |
| Error indication               | OP   |       | Failure            |                       |
|                                |      |       | cause and          |                       |
|                                |      |       | error              |                       |
|                                |      |       | information        |                       |
|                                |      |       | 10.3.3.14          |                       |

#### 10.2.39 RRC CONNECTION REQUEST

RRC Connection Request is the first message transmitted by the UE when setting up an RRC Connection to the network.

RLC-SAP: TM

Logical channel: CCCH

| Information Element/Group name                  | Need             | Multi | Type and reference   | Semantics description   | Version |
|---|------------------|-------|--|---|---------|
| Message Type                                    | MP               |       | Message<br>Type  |   |         |
| Radio Bearer IEs                                |                  |       | Туре   |   |         |
| Predefined configuration status information     | MP               |       | Boolean  | True indicates the UE has all preconfigurations stored with the same value tag as broadcast in the cell in which the RRC connection establishment is initiated        | REL-5   |
| UE information elements                         | 145              |       | 1 22 1115  |   |         |
| Initial UE identity                             | MP               |       | Initial UE identity 10.3.3.15                                  |   |         |
| Establishment cause                             | MP               |       | Establishme nt cause 10.3.3.11                                 |   |         |
| Protocol error indicator                        | MD               |       | Protocol<br>error<br>indicator<br>10.3.3.27                    | Default value is FALSE  |         |
| >UE Specific Behaviour<br>Information 1 idle    | OP               |       | UE Specific<br>Behaviour<br>Information 1<br>idle<br>10.3.3.51 | This IE shall not<br>be included in this<br>version of the<br>protocol  |         |
| Domain indicator                                | MP               |       | CN domain identity 10.3.1.1                                    |   | REL-6   |
| Call type                                       | CV-CS-<br>Domain |       | Enumerated (speech, video, other)                              | One spare value is needed   | REL-6   |
| UE capability indication                        | OP               |       | Enumerated<br>(HS-DSCH,<br>HS-<br>DSCH+E-<br>DCH)              | Absence of this IE implies that neither HS-DSCH nor E-DCH are supported by the UE   | REL-6   |
| MBMS Selected Services                          | OP               |       | MBMS<br>Selected<br>Services<br>Short<br>10.3.9a.7d            |   | REL-6   |
| UE Mobility State Indicator                     | MD               |       | Enumerated<br>(High-<br>mobilityDete<br>cted)                  | Absence of this IE implies that, according to [4] either the High mobility state is not applicable or it has not been detected by the UE.                             | REL-7   |
| Support for F-DPCH  Support for Enhanced F-DPCH | OP               |       | Enumerated (True)  | The IE shall be set to TRUE when F-DPCH is fully supported by the UE. Absence of this information element indicates that F-DPCH is not fully supported The absence of | REL-6   |

| _   |    | (True)                                      | this IE indicates<br>that the UE does<br>not support<br>enhanced F-<br>DPCH  |                     |
|---|----|---|--|---------------------|
| HS-PDSCH in CELL_FACH                       | OP | Enumerated<br>(TRUE)                        | The absence of this IE indicates that the UE does not support HS-PDSCH reception in CELL_FACH state.   | REL-7               |
| MAC-ehs support                             | OP | Enumerated<br>(TRUE)                        | The presence of this IE indicates that UE supports MAC-ehs, octet aligned transport block table and the use of special value of HE field to indicate end of an SDU for RLC AM. The absence of this IE indicates that the UE does not support either MAC-ehs, octet aligned transport block table or the use of special value of HE field to indicate end of an SDU for RLC AM. | REL-7               |
| DPCCH Discontinuous<br>Transmission support | OP | Enumerated<br>(TRUE)                        | The absence of this IE indicates that the UE does not support DPCCH Discontinuous Transmission   | REL-7               |
| Measurement information elements            |    |   |  |                     |
| Measured results on RACH                    | OP | Measured<br>results on<br>RACH<br>10.3.7.45 |  |                     |
| Access stratum release indicator            | MP | Enumerated(<br>REL-4,<br>REL-5,<br>REL-6,   | Absence of the IE implies R99. The IE also indicates the release of the RRC transfer syntax supported by the UE 12 spare values are needed   | REL-4  REL-5  REL-6 |
|   |    | REL-7)                                      |  | REL-7               |

| Condition | Explanation   |
|-----------|---|
| CS-Domain | This IE is mandatory present if the IE "Domain        |
|           | indicator" has the value "CS domain". Otherwise it is |
|           | not needed.   |

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1.

# 10.2.40 RRC CONNECTION SETUP

This message is used by the network to accept the establishment of an RRC connection for a UE, including assignment of signalling link information, transport channel information and optionally physical channel information.

RLC-SAP: UM

Logical channel: CCCH Direction: UTRAN  $\rightarrow$  UE

| Information Element/Group name          | Need     | Multi  | Type and reference     | Semantics description | Version |
|---|----------|--------|------------------------|-----------------------|---------|
| Message Type                            | MP       |        | Message                | •                     |         |
|   |          |        | Туре                   |                       |         |
| UE Information Elements                 |          |        |                        |                       |         |
| Initial UE identity                     | MP       |        | Initial UE             |                       |         |
|   |          |        | identity               |                       |         |
| DD0 : : : : : : : : : : : : : : : : : : | MD       |        | 10.3.3.15              |                       |         |
| RRC transaction identifier              | MP       |        | RRC                    |                       |         |
|   |          |        | transaction identifier |                       |         |
|   |          |        | 10.3.3.36              |                       |         |
| Activation time                         | MD       |        | Activation             | Default value is      | +       |
| Activation time                         | IVID     |        | time 10.3.3.1          | "now"                 |         |
| New U-RNTI                              | MP       |        | U-RNTI                 | TIOW                  |         |
| New O-KIVII                             | IVIE     |        | 10.3.3.47              |                       |         |
| New C-RNTI                              | OP       |        | C-RNTI                 |                       |         |
| New O KIVII                             |          |        | 10.3.3.8               |                       |         |
| New H-RNTI                              | OP       | 1      | H-RNTI                 |                       | REL-6   |
| NOW IT IN THE                           |          |        | 10.3.3.14a             |                       | 11220   |
| New Primary E-RNTI                      | OP       |        | E-RNTI                 |                       | REL-6   |
| a.,                                     |          |        | 10.3.3.10a             |                       | 1.120   |
| New Secondary E-RNTI                    | OP       |        | E-RNTI                 | FDD only              | REL-6   |
|   |          |        | 10.3.3.10a             | . 22 0,               | 1 0     |
| RRC State Indicator                     | MP       |        | RRC State              |                       |         |
|   |          |        | Indicator              |                       |         |
|   |          |        | 10.3.3.35a             |                       |         |
| UTRAN DRX cycle length                  | MP       |        | UTRAN DRX              |                       |         |
| coefficient                             |          |        | cycle length           |                       |         |
|   |          |        | coefficient            |                       |         |
|   |          |        | 10.3.3.49              |                       |         |
| Capability update requirement           | MD       |        | Capability             | Default value is      |         |
|   |          |        | update                 | defined in            |         |
|   |          |        | requirement            | subclause             |         |
|   |          |        | 10.3.3.2               | 10.3.3.2              |         |
| RNC support for change of UE capability | MP       |        | Boolean                |                       | REL-7   |
| CHOICE specification mode               | MP       |        |                        |                       | REL-5   |
| >Complete specification                 |          |        |                        |                       |         |
| RB Information Elements                 |          |        |                        |                       |         |
| >>Signalling RB information to          | MP       | 3 to 4 |                        |                       |         |
| setup list                              | <u> </u> |        | <u> </u>               |                       |         |
| >>>Signalling RB information to         | MP       |        | Signalling             |                       |         |
| setup                                   |          |        | RB                     |                       |         |
|   |          |        | information            |                       |         |
|   |          |        | to setup               |                       |         |
| TrCH Information Elements               | 1        | 1      | 10.3.4.24              |                       |         |
| Uplink transport channels               | 1        |        |                        |                       |         |
| >>UL Transport channel                  | OP       |        | UL Transport           |                       |         |
| information common for all              |          |        | channel                |                       |         |
| transport channels                      |          |        | information            |                       |         |
| Talloport offarillolo                   |          |        | common for             |                       |         |
|   |          |        | all transport          |                       |         |
|   |          |        | channels               |                       |         |
|   | 1        |        | 10.3.5.24              |                       | 1       |

| Information Element/Group name                | Need | Multi                                 | Type and reference  | Semantics<br>description   | Version |
|---|------|---------------------------------------|---|--|---------|
| >>Added or Reconfigured TrCH information list | MP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |   | Although this IE is not required when the IE "RRC state indicator" is set to "CELL_FACH", need is MP to align with ASN.1                   |         |
|   | OP   |                                       |   | angii wai 7 to ta 1  | REL-4   |
| >>>Added or Reconfigured UL TrCH information  | MP   |                                       | Added or<br>Reconfigure<br>d UL TrCH<br>information<br>10.3.5.2                               |  |         |
| >>Downlink transport channels                 | OP   |                                       | DI Transport  |  |         |
| information common for all transport channels |      |                                       | DL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.6 |  |         |
| >>Added or Reconfigured TrCH information list | MP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |   | Although this IE is<br>not required when<br>the IE "RRC state<br>indicator" is set to<br>"CELL_FACH",<br>need is MP to<br>align with ASN.1 |         |
|   | OP   |                                       |   |  | REL-4   |
| >>>Added or Reconfigured DL TrCH information  | MP   |                                       | Added or<br>Reconfigure<br>d DL TrCH<br>information<br>10.3.5.1                               |  |         |
| >Preconfiguration                             |      |                                       |   |  | REL-5   |
| >>CHOICE Preconfiguration mode                | MP   |                                       |   |  | REL-5   |
| >>>Predefined configuration identity          | MP   |                                       | Predefined configuration identity 10.3.4.5  |  | REL-5   |
| >>>Default configuration                      |      |                                       |   |  | REL-5   |
| >>>>Default configuration mode                | MP   |                                       | Enumerated<br>(FDD, TDD)  | Indicates whether<br>the FDD or TDD<br>version of the<br>default<br>configuration shall<br>be used   | REL-5   |
| >>>>Default configuration identity            | MP   |                                       | Default<br>configuration<br>identity<br>10.3.4.0  |  | REL-5   |
| PhyCH information elements                    | 65   |                                       | <u> </u>  |  |         |
| Frequency info                                | OP   |                                       | Frequency info 10.3.6.36  |  |         |
| Multi-frequency Info                          | OP   |                                       | Multi-<br>frequency<br>Info<br>10.3.6.39a   | This IE is used for<br>1.28 Mcps TDD<br>only   | REL-7   |

| Information Element/Group name                  | Need | Multi                   | Type and reference  | Semantics description                                      | Version |
|---|------|-------------------------|---|--|---------|
| DTX-DRX timing information                      | OP   |                         | DTX-DRX<br>timing<br>information<br>10.3.6.34b                        |  | REL-7   |
| DTX-DRX Information                             | OP   |                         | DTX-DRX<br>Information<br>10.3.6.34a                                  |  | REL-7   |
| HS-SCCH less Information                        | OP   |                         | HS-SCCH<br>less<br>Information<br>10.3.6.36ab                         |  | REL-7   |
| Uplink radio resources                          |      |                         |   |  |         |
| Maximum allowed UL TX power                     | MD   |                         | Maximum<br>allowed UL<br>TX power<br>10.3.6.39                        | Default value is<br>the existing<br>maximum UL TX<br>power |         |
| Uplink DPCH info                                | OP   |                         | Uplink<br>DPCH info<br>10.3.6.88                                      |  |         |
| E-DCH Info                                      | OP   |                         | E-DCH Info<br>10.3.6.97   |  | REL-6   |
| Downlink radio resources                        |      |                         |   |  |         |
| Downlink HS-PDSCH<br>Information                | OP   |                         | Downlink<br>HS-PDSCH<br>information<br>10.3.6.23a                     |  | REL-6   |
| Downlink information common for all radio links | OP   |                         | Downlink<br>information<br>common for<br>all radio links<br>10.3.6.24 |  |         |
| Downlink information per radio link list        | OP   | 1 to<br><maxrl></maxrl> |   | Send downlink information for each radio link to be set-up |         |
| >Downlink information for each radio link       | MP   |                         | Downlink<br>information<br>for each<br>radio link<br>10.3.6.27        |  |         |

# 10.2.41 RRC CONNECTION SETUP COMPLETE

This message confirms the establishment of the RRC Connection by the UE.  $\label{eq:confirm}$ 

RLC-SAP: AM

Logical channel: DCCH

| Information Element/Group name | Need | Multi                                       | Type and reference                            | Semantics description                       | Version |
|--------------------------------|------|---|---|---|---------|
| Message Type                   | MP   |   | Message<br>Type                               |   |         |
| UE Information Elements        |      |   |   |   |         |
| RRC transaction identifier     | MP   |   | RRC<br>transaction<br>identifier<br>10.3.3.36 |   |         |
| START list                     | MP   | 1 to<br><maxcndom<br>ains&gt;</maxcndom<br> |   | START [40]<br>values for all CN<br>domains. |         |
| >CN domain identity            | MP   |   | CN domain                                     |   |         |

| Information Element/Group name        | Need | Multi  | Type and reference  | Semantics description   | Version |
|---------------------------------------|------|--|---|---|---------|
|                                       |      |  | identity  |   |         |
| >START                                | MP   |  | 10.3.1.1<br>START<br>10.3.3.38                              | START value to be used in this  |         |
| UE radio access capability            | OP   |  | UE radio<br>access<br>capability<br>10.3.3.42               | CN domain.  |         |
| UE radio access capability extension  | OP   |  | UE radio<br>access<br>capability<br>extension<br>10.3.3.42a |   |         |
| Other information elements            |      |  |   |   |         |
| UE system specific capability         | OP   | 1 to<br><maxintersy<br>sMessages&gt;</maxintersy<br> |   |   |         |
| >Inter-RAT UE radio access capability | MP   |  | Inter-RAT UE radio access capability 10.3.8.7               |   |         |
| Deferred measurement control reading  | MD   |  | Enumerated<br>(TRUE)  | Indicates the UE has not read SIB11, SIB11bis and SIB12, if available. Default value is FALSE | REL-7   |

## 10.2.41a RRC FAILURE INFO

This message is sent by the UE via another radio access technology to provide information about the cause for failure to perform the requested operation.

RLC-SAP: N/A (Sent through a different RAT)

Logical channel: N/A (Sent through a different RAT)

| Information Element/Group Name | Need       | Multi | Type and reference | Semantics description |
|--------------------------------|------------|-------|--------------------|-----------------------|
| Other Information elements     |            |       |                    |                       |
| Failure cause                  | MP         |       | Failure            |                       |
|                                |            |       | cause              |                       |
|                                |            |       | 10.3.3.13          |                       |
| Protocol error information     | CV-ProtErr |       | Protocol           |                       |
|                                |            |       | error              |                       |
|                                |            |       | information        |                       |
|                                |            |       | 10.3.8.12          |                       |

| Condition | Explanation  |  |  |
|-----------|--|--|--|
| ProtErr   | Presence is mandatory if the IE "Failure cause" has  |  |  |
|           | the value "Protocol error"; otherwise the element is |  |  |
|           | not needed in the message.                           |  |  |

# 10.2.42 RRC STATUS

This message is sent to indicate a protocol error.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group name     | Need                         | Multi | Type and reference                            | Semantics description   |
|------------------------------------|------------------------------|-------|---|---|
| Message Type                       | MP                           |       | Message<br>Type                               |   |
| UE information elements            |                              |       |   |   |
| Integrity check info               | СН                           |       | Integrity<br>check info<br>10.3.3.16          | Integrity check info is included if integrity protection is applied |
| Identification of received message | CV-<br>Message<br>identified |       |   |   |
| >Received message type             | MP                           |       | Message<br>Type                               |   |
| >RRC transaction identifier        | MP                           |       | RRC<br>transaction<br>identifier<br>10.3.3.36 |   |
| Other information elements         |                              |       |   |   |
| Protocol error information         | MP                           |       | Protocol<br>error<br>information<br>10.3.8.12 |   |

| Condition          | Explanation  |
|--------------------|--|
| Message identified | This IE is mandatory present if the IE "Protocol error cause" in the |
|                    | IE "Protocol error information" has any other value than "ASN.1      |
|                    | violation or encoding error" or "Message type non-existent or not    |
|                    | implemented" and not needed otherwise.                               |

## 10.2.43 SECURITY MODE COMMAND

This message is sent by UTRAN to start or reconfigure ciphering and/or integrity protection parameters.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN to UE

| Information Element/Group name | Need | Multi | Type and reference                            | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| Message Type                   | MP   |       | Message<br>Type                               |                       |
| UE information elements        |      |       |   |                       |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36 |                       |
| Integrity check info           | MP   |       | Integrity<br>check info<br>10.3.3.16          |                       |
| Security capability            | MP   |       | Security<br>capability<br>10.3.3.37           |                       |

| Information Element/Group name         | Need | Multi   | Type and reference                                  | Semantics description  |
|--|------|---|---|--|
| Ciphering mode info                    | OP   |   | Ciphering<br>mode info<br>10.3.3.5                  | Only present if ciphering shall be controlled  |
| Integrity protection mode info         | OP   |   | Integrity<br>protection<br>mode info<br>10.3.3.19   | Only present if integrity protection shall be controlled   |
| CN Information elements                |      |   |   |  |
| CN domain identity                     | MP   |   | CN domain identity 10.3.1.1                         | Indicates which ciphering and integrity protection keys are applicable   |
| Other information elements             |      |   |   |  |
| UE system specific security capability | СН   | 1 to<br><maxinter<br>SysMessa<br/>ges&gt;</maxinter<br> |   | This IE is included if the IE "Inter-RAT UE radio access capability" was included in RRC CONNECTION SETUP COMPLETE message |
| >Inter-RAT UE security capability      | MP   |   | Inter-RAT<br>UE security<br>capability<br>10.3.8.8a |  |

## 10.2.44 SECURITY MODE COMPLETE

This message is sent by UE to confirm the reconfiguration of ciphering and/or integrity protection.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE to UTRAN

| Information Element/Group name                     | Need | Multi | Type and reference   | Semantics description |
|--|------|-------|--|-----------------------|
| Message Type                                       | MP   |       | Message  |                       |
| UE information elements                            |      |       | Туре   |                       |
| RRC transaction identifier                         | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36              |                       |
| Integrity check info                               | MP   |       | Integrity<br>check info<br>10.3.3.16                       |                       |
| Uplink integrity protection activation info        | OP   |       | Integrity<br>protection<br>activation<br>info<br>10.3.3.17 |                       |
| RB Information elements                            |      |       |  |                       |
| Radio bearer uplink ciphering activation time info | OP   |       | RB activation time info 10.3.4.13                          |                       |

#### 10.2.45 SECURITY MODE FAILURE

This message is sent to indicate a failure to act on a received SECURITY MODE COMMAND message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group  | Need | Multi | Type and    | Semantics description |
|----------------------------|------|-------|-------------|-----------------------|
| name                       |      |       | reference   |                       |
| Message Type               | MP   |       | Message     |                       |
|                            |      |       | Type        |                       |
| UE information elements    |      |       |             |                       |
| RRC transaction identifier | MP   |       | RRC         |                       |
|                            |      |       | transaction |                       |
|                            |      |       | identifier  |                       |
|                            |      |       | 10.3.3.36   |                       |
| Integrity check info       | CH   |       | Integrity   |                       |
|                            |      |       | check info  |                       |
|                            |      |       | 10.3.3.16   |                       |
| Failure cause              | MP   |       | Failure     |                       |
|                            |      |       | cause and   |                       |
|                            |      |       | error       |                       |
|                            |      |       | information |                       |
|                            |      |       | 10.3.3.14   |                       |

## 10.2.46 SIGNALLING CONNECTION RELEASE

This message is used to notify the UE that its ongoing signalling connection to a CN domain has been released.

RLC-SAP: AM

Logical channel: DCCH

Direction: UTRAN→UE

| Information Element/Group name | Need | Multi | Type and reference | Semantics description              |
|--------------------------------|------|-------|--------------------|------------------------------------|
| Message Type                   | MP   |       | Message            |                                    |
|                                |      |       | Туре               |                                    |
| UE information elements        |      |       |                    |                                    |
| RRC transaction identifier     | MP   |       | RRC                |                                    |
|                                |      |       | transaction        |                                    |
|                                |      |       | identifier         |                                    |
|                                |      |       | 10.3.3.36          |                                    |
| Integrity check info           | CH   |       | Integrity          | Integrity check info is included   |
|                                |      |       | check info         | if integrity protection is applied |
|                                |      |       | 10.3.3.16          |                                    |
| CN information elements        |      |       |                    |                                    |
| CN domain identity             | MP   |       | CN domain          |                                    |
|                                |      |       | identity           |                                    |
|                                |      |       | 10.3.1.1           |                                    |

## 10.2.47 SIGNALLING CONNECTION RELEASE INDICATION

This message is used by the UE to indicate to UTRAN the release of an existing signalling connection.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group name | Need | Multi | IE type and reference                | Semantics description |
|--------------------------------|------|-------|--------------------------------------|-----------------------|
| Message Type                   | MP   |       | Message<br>type                      |                       |
| UE Information Elements        |      |       |                                      |                       |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16 |                       |
| CN information elements        |      |       |                                      |                       |
| CN domain identity             | MP   |       | CN domain identity 10.3.1.1          |                       |

# 10.2.48 SYSTEM INFORMATION

This message is used by the UTRAN to convey system information blocks to the UE.

RLC-SAP: TM

Logical channel: BCCH

Direction: UTRAN→UE

| Information Element/Group  | Need            | Multi                    | Type and                                  | Semantics description  |
|----------------------------|-----------------|--------------------------|---|--|
| name                       |                 |                          | reference                                 | •  |
| Message type               | CV-             |                          | Message                                   |  |
|                            | channel1        |                          | type                                      |  |
| SFNprime                   | CV-<br>channel2 |                          | Integer(040<br>94 by step of<br>2)        | SFN=SFNprime (for first 10ms frame of 20ms TTI),<br>SFN=SFNprime+1 (for last 10ms frame of 20ms TTI) |
| CHOICE Segment combination | MP              |                          |   | Five spares are needed   |
| >Combination 1             |                 |                          |   | (no data)  |
| >Combination 2             |                 |                          |   |  |
| >>First Segment            | MP              |                          | First<br>Segment,<br>10.2.48.1            |  |
| >Combination 3             |                 |                          |   |  |
| >>Subsequent Segment       | MP              |                          | Subsequent<br>Segment,<br>10.2.48.3       |  |
| >Combination 4             |                 |                          |   |  |
| >>Last segment             | MP              |                          | Last<br>segment<br>(short),10.2.<br>48.5  |  |
| >Combination 5             |                 |                          |   | NOTE 2   |
| >>Last segment             | MP              |                          | Last<br>Segment<br>(short)10.2.4<br>8.5   |  |
| >>First Segment            | MP              |                          | First<br>Segment<br>(short),<br>10.2.48.2 |  |
| >Combination 6             |                 |                          |   | NOTE 2   |
| >>Last Segment             | MP              |                          | Last<br>Segment<br>(short),<br>10.2.48.5  |  |
| >>Complete list            | MP              | 1 to<br>maxSIBper<br>Msg |   | NOTE 1   |
| >>>Complete                | MP              |                          | Complete<br>SIB                           |  |

| Information Element/Group name                           | Need                                | Multi                    | Type and reference                        | Semantics description       |  |  |
|--|-------------------------------------|--------------------------|---|-----------------------------|--|--|
|  |                                     |                          | (short),10.2.<br>48.7                     |                             |  |  |
| >Combination 7   |                                     |                          |   | NOTE 2                      |  |  |
| >>Last Segment   | MP                                  |                          | Last<br>Segment<br>(short),<br>10.2.48.5  |                             |  |  |
| >>Complete list  | MP                                  | 1<<br>maxSIBper<br>Msg>  |   | NOTE 1                      |  |  |
| >>>Complete  | MP                                  |                          | Complete<br>SIB<br>(short),10.2.<br>48.7  |                             |  |  |
| >>First Segment  | MP                                  |                          | First<br>Segment<br>(short),<br>10.2.48.2 |                             |  |  |
| >Combination 8   |                                     |                          |   | NOTE 2                      |  |  |
| >>Complete list  | MP                                  | 1 to<br>maxSIBper<br>Msg |   | NOTE 1                      |  |  |
| >>>Complete  | MP                                  |                          | Complete<br>SIB<br>(short),10.2.<br>48.7  |                             |  |  |
| >Combination 9   |                                     |                          |   | NOTE 2                      |  |  |
| >>Complete list  | MP                                  | 1MaxSIB<br>perMsg        |   | NOTE 1                      |  |  |
| >>>Complete  | MP Complete SIB (short),10.2. 48.7  |                          |   |                             |  |  |
| >>First Segment  | MP                                  |                          | First<br>Segment<br>(short),<br>10.2.48.2 |                             |  |  |
| >Combination 10  |                                     |                          |   |                             |  |  |
| >>>Complete SIB of size 215 to 226                       | MP                                  |                          | Complete<br>SIB,10.2.48.                  |                             |  |  |
| >Combination 11  |                                     |                          |   |                             |  |  |
| >>Last segment of size 215 to 222                        | Last segment of size 215 to MP Last |                          |   |                             |  |  |
|  |                                     | er information b         |   | information block shall be  |  |  |
| located as the first IE in                               |                                     |                          |   | · <del>-</del>              |  |  |
| NOTE 2: If one of the combination more than once in that |                                     |                          |   | sion Type" should not occur |  |  |
| more than once in that                                   | message, oth                        | erwise the UE            | benaviour is uns                          | pecinea.                    |  |  |

| Condition | Explanation  |
|-----------|--|
| channel1  | The IE is mandatory present if the message is sent on the FACH and not needed otherwise. |
| channel2  | This IE is mandatory present if the channel is BCH, otherwise it is not needed.          |

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1. Padding is needed e.g. if the remaining space is insufficient to start a new First Segment (which requires several bits for SIB type, SEG\_COUNT and SIB data).

#### 10.2.48.1 First Segment

This segment type is used to transfer the first segment of a segmented system information block. The IE is used when the first segment fills the entire transport block (Combination 2).

| Information Element/Group name | Need | Multi | Type and reference              | Semantics description |
|--------------------------------|------|-------|---------------------------------|-----------------------|
| Other information elements     |      |       | 1010101100                      |                       |
| SIB type                       | MP   |       | SIB Type,<br>10.3.8.21          |                       |
| SEG_COUNT                      | MP   |       | SEG<br>COUNT,<br>10.3.8.17      |                       |
| SIB data fixed                 | MP   |       | SIB data<br>fixed,<br>10.3.8.19 |                       |

## 10.2.48.2 First Segment (short)

This segment type is used to transfer the first segment of a segmented system information block. The IE is used when the first segment is concatenated after other segments in a transport block (Combination 5, 7 and 9).

| Information Element/Group name | Need | Multi | Type and reference                 | Semantics description |
|--------------------------------|------|-------|------------------------------------|-----------------------|
| Other information elements     |      |       |                                    |                       |
| SIB type                       | MP   |       | SIB Type,<br>10.3.8.21             |                       |
| SEG_COUNT                      | MP   |       | SEG<br>COUNT,<br>10.3.8.17         |                       |
| SIB data variable              | MP   |       | SIB data<br>variable,<br>10.3.8.20 |                       |

#### 10.2.48.3 Subsequent Segment

This segment type is used to transfer a subsequent segment of a segmented system information block.

| Information Element/Group  | Need | Multi | Type and  | Semantics description |
|----------------------------|------|-------|-----------|-----------------------|
| name                       |      |       | reference |                       |
| Other information elements |      |       |           |                       |
| SIB type                   | MP   |       | SIB Type, |                       |
|                            |      |       | 10.3.8.21 |                       |
| Segment index              | MP   |       | Segment   |                       |
|                            |      |       | Index,    |                       |
|                            |      |       | 10.3.8.18 |                       |
| SIB data fixed             | MP   |       | SIB data  |                       |
|                            |      |       | fixed,    |                       |
|                            |      |       | 10.3.8.19 |                       |

#### 10.2.48.4 Last Segment

This segment type is used to transfer the last segment of a segmented system information block. The IE is used when the last segment has a length, excluding length denominator, from 215 through 222 (Combination 11).

| Information Element/Group  | Need | Multi | Type and  | Semantics description           |
|----------------------------|------|-------|-----------|---------------------------------|
| name                       |      |       | reference |                                 |
| Other information elements |      |       |           |                                 |
| SIB type                   | MP   |       | SIB Type, |                                 |
|                            |      |       | 10.3.8.21 |                                 |
| Segment index              | MP   |       | Segment   |                                 |
|                            |      |       | Index,    |                                 |
|                            |      |       | 10.3.8.18 |                                 |
| SIB data fixed             | MP   |       | SIB data  | In case the SIB data is less    |
|                            |      |       | fixed,    | than 222 bits, padding shall be |
|                            |      |       | 10.3.8.19 | used. The same padding bits     |
|                            |      |       |           | shall be used as defined in     |
|                            |      |       |           | clause 12.1                     |

#### 10.2.48.5 Last Segment (short)

This segment type is used to transfer the last segment of a segmented system information block. The IE is used when the last segment has a length, excluding length denominator, of upto 214 bits (Combination 4, 5, 6 and 7).

| Information Element/Group  | Need | Multi | Type and  | Semantics description |
|----------------------------|------|-------|-----------|-----------------------|
| name                       |      |       | reference |                       |
| Other information elements |      |       |           |                       |
| SIB type                   | MP   |       | SIB Type, |                       |
|                            |      |       | 10.3.8.21 |                       |
| Segment index              | MP   |       | Segment   |                       |
|                            |      |       | Index,    |                       |
|                            |      |       | 10.3.8.18 |                       |
| SIB data variable          | MP   |       | SIB data  |                       |
|                            |      |       | variable, |                       |
|                            |      |       | 10.3.8.20 |                       |

#### 10.2.48.6 Complete SIB

This segment type is used to transfer a non-segmented system information block. The IE is used when the complete SIB has a length, excluding length denominator, from 215 through 226 (Combination 10).

| Information Element/Group name | Need | Multi | Type and reference     | Semantics description   |
|--------------------------------|------|-------|------------------------|---|
| Other information elements     |      |       |                        |   |
| SIB type                       | MP   |       | SIB Type,<br>10.3.8.21 |   |
| SIB data fixed                 | MP   |       | Bit string<br>(226)    | The first/leftmost/most significant bit of the bit string contains the first bit of the segment. In case the SIB data is less than 226 bits, padding shall be used. The same padding bits shall be used as defined in clause 12.1 |

#### 10.2.48.7 Complete SIB (short)

This segment type is used to transfer a non-segmented system information block. The IE is used when the complete SIB has a length, excluding length denominator, of upto 214 bits (Combination 6, 7, 8 and 9).

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Other information elements     |      |       |                    |                       |
| SIB type                       | MP   |       | SIB Type,          |                       |
|                                |      |       | 10.3.8.21          |                       |
| SIB data variable              | MP   |       | SIB data           |                       |
|                                |      |       | variable,          |                       |
|                                |      |       | 10.3.8.20          |                       |

#### 10.2.48.8 System Information Blocks

The IE "SIB data" within the IEs, "First Segment", "Subsequent or last Segment" and "Complete SIB" contains either complete system information block or a segment of a system information block. The actual system information blocks are defined in the following clauses.

#### 10.2.48.8.1 Master Information Block

| Information Element/Group name                                      | Need           | Multi | Type and reference   | Semantics description  | Version |
|---|----------------|-------|--|--|---------|
| Other information elements  |                |       |  |  |         |
| MIB Value tag   | MP             |       | MIB Value<br>tag 10.3.8.9  |  |         |
| CN information elements   |                |       | Ŭ  |  |         |
| Supported PLMN types  | MP             |       | PLMN Type<br>10.3.1.12   |  |         |
| PLMN Identity   | CV-GSM         |       | PLMN<br>Identity<br>10.3.1.11  |  |         |
| Multiple PLMN List  | OP             |       | Multiple<br>PLMN List<br>10.3.1.7a   | If present, this IE specifies the PLMNs of the cell. If absent, the IE "PLMN Identity" specifies the PLMN of the cell. | REL-6   |
| ANSI-41 information elements  |                |       |  |  |         |
| ANSI-41 Core Network<br>Information                                 | CV-ANSI-<br>41 |       | ANSI-41<br>Core<br>Network<br>Information<br>10.3.9.1  |  |         |
| References to other system information blocks and scheduling blocks | MP             |       | References<br>to other<br>system<br>information<br>blocks and<br>scheduling<br>blocks<br>10.3.8.14 |  |         |

| Condition | Explanation                                      |
|-----------|--|
| GSM       | The IE is mandatory present if the IE "Supported |
|           | PLMN Types" is set to 'GSM-MAP' or 'GSM-MAP      |
|           | AND ANSI-41', and not needed otherwise           |
| ANSI-41   | The IE is mandatory present if the IE "Supported |
|           | PLMN Types" is set to 'ANSI-41' or 'GSM-MAP AND  |
|           | ANSI-41', and not needed otherwise               |

## 10.2.48.8.2 Scheduling Block 1

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| References to other system     | MP   |       | References         |                       |
| information blocks             |      |       | to other           |                       |
|                                |      |       | system             |                       |
|                                |      |       | information        |                       |
|                                |      |       | blocks             |                       |
|                                |      |       | 10.3.8.13          |                       |

## 10.2.48.8.3 Scheduling Block 2

| Information Element/Group  | Need | Multi | Type and    | Semantics description |
|----------------------------|------|-------|-------------|-----------------------|
| name                       |      |       | reference   |                       |
| References to other system | MP   |       | References  |                       |
| information blocks         |      |       | to other    |                       |
|                            |      |       | system      |                       |
|                            |      |       | information |                       |
|                            |      |       | blocks      |                       |
|                            |      |       | 10.3.8.13   |                       |

## 10.2.48.8.4 System Information Block type 1

The system information block type 1 contains NAS system information as well as UE timers and counters to be used in idle mode and in connected mode.

| Information Element/Group name            | Need | Multi                                      | Type and reference   | Semantics description   |
|---|------|--|--|---|
| CN information elements                   |      |  |  |   |
| CN common GSM-MAP NAS system information  | MP   |  | NAS system<br>information<br>(GSM-MAP)<br>10.3.1.9                 |   |
| CN domain system information list         | MP   | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br> |  | Send CN information for each CN domain.   |
| >CN domain system information             | MP   |  | CN domain<br>system<br>information<br>10.3.1.2                     |   |
| UE information                            |      |  |  |   |
| UE Timers and constants in idle mode      | MD   |  | UE Timers<br>and<br>constants in<br>idle mode<br>10.3.3.44         | The UE behaviour is unspecified if this IE is absent.   |
| UE Timers and constants in connected mode | MD   |  | UE Timers<br>and<br>constants in<br>connected<br>mode<br>10.3.3.43 | Default value means that for all timers and constants - For parameters with need MD, the defaults specified in 10.3.3.43 apply and - For parameters with need OP, the parameters are absent |

### 10.2.48.8.5 System Information Block type 2

The system information block type 2 contains the URA identity.

| Information Element/Group name | Need | Multi                                     | Type and reference | Semantics description |
|--------------------------------|------|---|--------------------|-----------------------|
| UTRAN mobility information     |      |   |                    |                       |
| elements                       |      |   |                    |                       |
| URA identity list              | MP   | 1   |                    |                       |
|                                |      | <maxur< td=""><td></td><td></td></maxur<> |                    |                       |
|                                |      | A>  |                    |                       |
| >URA identity                  | MP   |   | URA identity       |                       |
|                                |      |   | 10.3.2.6           |                       |

## 10.2.48.8.6 System Information Block type 3

The system information block type 3 contains parameters for cell selection and re-selection.

| Information Element/Group name                                       | Need | Multi | Type and reference   | Semantics description  | Version        |
|--|------|-------|--|--|----------------|
| SIB4 Indicator   | MP   |       | Boolean  | TRUE indicates that SIB4 is broadcast in the cell.   |                |
| UTRAN mobility information elements                                  |      |       |  | broadcast in the ceil.   |                |
| Cell identity  | MP   |       | Cell identity<br>10.3.2.2  |  |                |
| Cell selection and re-selection info                                 | MP   |       | Cell<br>selection<br>and re-<br>selection info<br>for SIB3/4<br>10.3.2.3 |  |                |
| Cell Access Restriction  | MP   |       | Cell Access<br>Restriction<br>10.3.2.1                                   |  |                |
| Domain Specific Access Restriction Parameters For PLMN Of MIB        | OP   |       | Domain<br>Specific<br>Access<br>Restriction<br>Parameters<br>10.3.1.3c   | This IE specifies the Domain Specific Access Restriction Parameters for UEs which has chosen the PLMN in the IE "PLMN identity" of the Master Information Block. If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified. | REL-6          |
| Domain Specific Access<br>Restriction For Shared Network             | OP   |       |  | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.  | REL-6          |
| >CHOICE barring representation<br>>>Domain Specific Access           | MP   |       |  |  | REL-6<br>REL-6 |
| Restriction List   |      |       |  |  | KEL-0          |
| >>>Domain Specific Access<br>Restriction Parameters For<br>Operator1 | OP   |       | Domain<br>Specific<br>Access<br>Restriction<br>Parameters<br>10.3.1.3c   | This IE specifies the Domain Specific Access Restriction Parameters for UEs which has chosen the first PLMN in the IE "multiplePLMNs" in the IE "Multiple PLMN List" of the Master Information Block.  | REL-6          |
| >>>Domain Specific Access<br>Restriction Parameters For<br>Operator2 | OP   |       | Domain<br>Specific<br>Access<br>Restriction<br>Parameters<br>10.3.1.3c   | This IE specifies the Domain Specific Access Restriction Parameters for UEs which has chosen the second PLMN in the IE "multiple PLMNs" in the IE "Multiple PLMN List" of the Master Information Block.  | REL-6          |
| >>>Domain Specific Access<br>Restriction Parameters For<br>Operator3 | OP   |       | Domain<br>Specific<br>Access<br>Restriction<br>Parameters<br>10.3.1.3c   | This IE specifies the Domain Specific Access Restriction Parameters for UEs which has chosen the third PLMN in the IE "multiplePLMNs" in the IE "Multiple PLMN List" of the Master Information Block.  | REL-6          |
| >>>Domain Specific Access<br>Restriction Parameters For<br>Operator4 | OP   |       | Domain<br>Specific<br>Access<br>Restriction<br>Parameters<br>10.3.1.3c   | This IE specifies the Domain Specific Access Restriction Parameters for UEs which has chosen the fourth PLMN in the IE "multiplePLMNs" in the IE "Multiple PLMN List" of the Master Information Block.   | REL-6          |
| >>>Domain Specific Access<br>Restriction Parameters For<br>Operator5 | OP   |       | Domain<br>Specific<br>Access<br>Restriction                              | This IE specifies the Domain<br>Specific Access Restriction<br>Parameters for UEs which has<br>chosen the fifth PLMN in the  | REL-6          |

|   |    |        | Parameters<br>10.3.1.3c  | IE "multiplePLMNs" in the IE "Multiple PLMN List" of the Master Information Block.  |       |
|---|----|--------|--|---|-------|
| >>Domain Specific Access Restriction Parameters For All |    |        |  |   | REL-6 |
| >>>Domain Specific Access<br>Restriction Parameters     |    |        | Domain<br>Specific<br>Access<br>Restriction<br>Parameters<br>10.3.1.3c | This IE specifies the common Domain Specific Access Restriction Parameters applied to all PLMNs in the IE "multiplePLMNs" in the IE "Multiple PLMN List" of the Master Information Block. | REL-6 |
| Deferred measurement control reading                    | OP |        | Enumerated<br>(TRUE)   | If present, the UE may apply deferred reading of SIB11, SIB11bis and SIB12. If not present, deferred reading may not be applied.  | REL-7 |
| >CHOICE mode  | OP |        |  | If absent, the default reporting quantities are: "CPICH RSCP" (FDD) and "Primary CCPCH RSCP" (TDD).   | REL-7 |
| >>FDD   |    |        |  |   | REL-7 |
| >>>Intra-frequency reporting quantity SIB3              | MP |        | Enumerated(<br>CPICH<br>Ec/N0,<br>CPICH<br>RSCP)                       |   | REL-7 |
| >>TDD   |    |        |  |   | REL-7 |
| >>>Reporting quantity list                              | MP | 1 to 2 |  |   | REL-7 |
| >>>Intra-frequency reporting quantity SIB3              | MP |        | Enumerated<br>(Primary<br>CCPCH<br>RSCP,<br>Timeslot<br>ISCP)          |   | REL-7 |
| MBSFN only service                                      | ОР |        | Enumerated(<br>true)   | Indicates if the cell provides only MBMS services in MBSFN mode   | REL-7 |

## 10.2.48.8.7 System Information Block type 4

The system information block type 4 contains parameters for cell selection and re-selection to be used in connected mode.

| Information Element/Group name       | Need | Multi | Type and reference   | Semantics description |
|--------------------------------------|------|-------|--|-----------------------|
| UTRAN mobility information elements  |      |       |  |                       |
| Cell identity                        | MP   |       | Cell identity<br>10.3.2.2  |                       |
| Cell selection and re-selection info | MP   |       | Cell<br>selection<br>and re-<br>selection info<br>for SIB3/4<br>10.3.2.3 |                       |
| Cell Access Restriction              | MP   |       | Cell Access<br>Restriction<br>10.3.2.1                                   |                       |

### 10.2.48.8.8 System Information Block type 5 and 5bis

The system information block type 5 contains parameters for the configuration of the common physical channels in the cell. System information block type 5bis uses the same structure as System information block type 5. System information block type 5bis is sent instead of system information block type 5 in cells that use Band IV or Band IX or Band X.

| Information<br>Element/Group name | Need | Multi | Type and reference  | Semantics description  | Version |
|-----------------------------------|------|-------|---|--|---------|
| SIB6 Indicator                    | MP   |       | Boolean   | TRUE indicates that SIB6 is broadcast in the cell.   |         |
| PhyCH information elements        |      |       |   |  |         |
| PICH Power offset                 | MP   |       | PICH<br>Power<br>offset<br>10.3.6.50                      | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this IE would not have been received.                        |         |
| CHOICE mode                       | MP   |       |   |  |         |
| >>FDD  >>AICH Power offset        | MP   |       | AICH<br>Power<br>offset<br>10.3.6.3                       | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this IE would not have been received.                        |         |
| >TDD                              | OD   |       | DUCCU   | If the call is an austing in   |         |
| >>PUSCH system information        | OP   |       | PUSCH<br>system<br>informatio<br>n<br>10.3.6.66           | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.                        |         |
| >>PUSCH system information VHCR   | OP   |       | PUSCH<br>system<br>informatio<br>n VHCR<br>10.3.6.66<br>a | Only for 7.68 Mcps TDD If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified. | REL-7   |
| >>PDSCH system information        | OP   |       | PDSCH<br>system<br>informatio<br>n<br>10.3.6.46           | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.                        |         |
| >>TDD open loop power control     | MP   |       | TDD open<br>loop<br>power<br>control<br>10.3.6.79         | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this IE would not have been received.                        |         |
| Primary CCPCH info                | OP   |       | Primary<br>CCPCH<br>info<br>10.3.6.57                     | Note 1   |         |
| PRACH system information list     | MP   |       | PRACH<br>system<br>informatio                             | If the cell is operating in<br>MBSFN mode as<br>indicated in subclause   |         |

| Information<br>Element/Group name  | Need        | Multi | Type and reference  | Semantics description  | Version |
|------------------------------------|-------------|-------|---|--|---------|
|                                    |             |       | n list<br>10.3.6.55   | 8.1.1.6.3 the UE<br>behaves as if this IE<br>would not have been<br>received.  |         |
| Secondary CCPCH system information | MP          |       | Secondar<br>y CCPCH<br>system<br>informatio<br>n<br>10.3.6.72 | Note 2 If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this IE would not have been received. |         |
| CBS DRX Level 1 information        | CV-<br>CTCH |       | CBS DRX<br>Level 1<br>informatio<br>n 10.3.8.3                |  |         |

| Information<br>Element/Group name             | Need | Multi | Type and reference  | Semantics description  | Version |
|---|------|-------|---|--|---------|
| Frequency band indicator                      | OP   |       | Frequenc<br>y band<br>indicator<br>10.3.6.35<br>b                       |  | REL-6   |
| Frequency band indicator 2                    | OP   |       | Frequenc<br>y band<br>indicator<br>2<br>10.3.6.35                       |  | REL-6   |
| HSDPA cell Indicator                          | MD   |       | Enumerat<br>ed<br>(HSDPA<br>Capable<br>Cell)                            | Default is 'HSDPA capability not indicated'.  'HSDPA Capable Cell' means that the UE may consider this cell as part of the HSDPA coverage area for display indication only.  This indication shall not be used for any other purpose.  If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this IE would not have been received. | REL-6   |
| E-DCH cell Indicator                          | MD   |       | Enumerat<br>ed (E-<br>DCH<br>Capable<br>Cell)                           | Default is 'E-DCH capability not indicated'.  'E-DCH Capable Cell' means that the UE may consider this cell as part of the E-DCH coverage area for display indication only.  This indication shall not be used for any other purpose.  If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this IE would not have been received. | REL-6   |
| Secondary CCPCH<br>system information<br>MBMS | OP   |       | Secondar<br>y CCPCH<br>system<br>informatio<br>n MBMS<br>10.3.6.72<br>a | Included if MCCH is on<br>an S-CCPCH used only<br>for MBMS. Note 2   | REL-6   |
| CHOICE mode                                   | OP   | -     |   |  | REL-7   |
| >FDD >>HS-DSCH common system information      | MP   |       | HS-DSCH<br>common<br>system<br>informatio<br>n<br>10.3.6.36<br>c        | Included if cell supports HS-DSCH reception in CELL_FACH and during IDLE to RRC Connection state transition.   | REL-7   |
| >>HS-DSCH paging                              | OP   |       | HS-DSCH   | Included if cell supports  | REL-7   |

| Information Element/Group name | Need | Multi | Type and reference                                    | Semantics description  | Version |
|--------------------------------|------|-------|---|--|---------|
| system information             |      |       | paging<br>system<br>informatio<br>n<br>10.3.6.36<br>d | for UEs in RRC<br>Connected state paging<br>message reception on<br>HS-DSCH. |         |
| >TDD                           |      |       |   | (no data)  | REL-7   |
| TDD MBSFN information          | OP   |       | TDD<br>MBSFN<br>Informatio<br>n<br>10.3.6.78<br>b     | TDD only: included only if some timeslots are designated to MBSFN.           | REL-7   |

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

NOTE 2: There is only one MCCH in a cell, which may either be mapped on to an S-CCPCH also used for non-MBMS purposes or to an S-CCPCH dedicated to MBMS. In the first case the MCCH configuration is specified within the IE "Secondary CCPCH system information", in the latter case the MCCH configuration is provided within the IE "Secondary CCPCH system information MBMS".

| Condition | Explanation  |
|-----------|--|
| CTCH      | The IE is mandatory present if the IE "CTCH        |
|           | indicator" is equal to TRUE for at least one FACH, |
|           | otherwise the IE is not needed in the message      |

#### 10.2.48.8.9 System Information Block type 6

The system information block type 6 contains parameters for the configuration of the common and shared physical channels to be used in connected mode.

| Information<br>Element/Group name | Need | Multi | Type and reference  | Semantics description  | Version |
|-----------------------------------|------|-------|---|------------------------|---------|
| PhyCH information elements        |      |       |   |                        |         |
| PICH Power offset                 | MP   |       | PICH<br>Power<br>offset<br>10.3.6.50                      |                        |         |
| CHOICE mode                       | MP   |       |   |                        |         |
| >FDD                              |      |       |   |                        |         |
| >>AICH Power offset               | MP   |       | AICH<br>Power<br>offset<br>10.3.6.3                       |                        |         |
| >TDD                              |      |       |   |                        |         |
| >>PUSCH system information        | OP   |       | PUSCH<br>system<br>informatio<br>n<br>10.3.6.66           |                        |         |
| >>PUSCH system information VHCR   | OP   |       | PUSCH<br>system<br>informatio<br>n VHCR<br>10.3.6.66<br>a | Only for 7.68 Mcps TDD | REL-7   |
| >>PDSCH system information        | OP   |       | PDSCH<br>system<br>informatio<br>n<br>10.3.6.46           |                        |         |
| >>TDD open loop power             | MP   |       | TDD open  |                        |         |

| Information<br>Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|-----------------------------------|------|-------|--------------------|-----------------------|---------|
| control                           |      |       | loop               |                       |         |
|                                   |      |       | power              |                       |         |
|                                   |      |       | control            |                       |         |
|                                   |      |       | 10.3.6.79          |                       |         |
| Primary CCPCH info                | OP   |       | Primary            | Note 1                |         |
|                                   |      |       | CCPCH              |                       |         |
|                                   |      |       | info               |                       |         |
|                                   |      |       | 10.3.6.57          |                       |         |
| PRACH system                      | OP   |       | PRACH              |                       |         |
| information list                  |      |       | system             |                       |         |
|                                   |      |       | informatio         |                       |         |
|                                   |      |       | n list             |                       |         |
|                                   |      |       | 10.3.6.55          |                       |         |
| Secondary CCPCH                   | OP   |       | Secondar           |                       |         |
| system information                |      |       | у ССРСН            |                       |         |
|                                   |      |       | system             |                       |         |
|                                   |      |       | informatio         |                       |         |
|                                   |      |       | n                  |                       |         |
| 000 000                           | 0) / |       | 10.3.6.72          |                       |         |
| CBS DRX Level 1                   | CV-  |       | CBS DRX            |                       |         |
| information                       | CTCH |       | Level 1            |                       |         |
|                                   |      |       | informatio         |                       |         |
|                                   | 0.5  |       | n 10.3.8.3         |                       | DEL 0   |
| Frequency band indicator          | OP   |       | Frequenc           |                       | REL-6   |
|                                   |      |       | y band             |                       |         |
|                                   |      |       | indicator          |                       |         |
|                                   |      |       | 10.3.6.35          |                       |         |
| Francisco de la coltación de      | 0.0  |       | b                  |                       | DELO    |
| Frequency band indicator          | OP   |       | Frequenc           |                       | REL-6   |
| 2                                 |      |       | y band             |                       |         |
|                                   |      |       | indicator          |                       |         |
|                                   |      |       | 2                  |                       |         |
|                                   |      |       | 10.3.6.35          |                       |         |
|                                   |      |       | С                  |                       |         |

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

| Condition | Explanation  |
|-----------|--|
| CTCH      | The IE is mandatory present if the IE "CTCH        |
|           | indicator" is equal to TRUE for at least one FACH, |
|           | otherwise the IE is not needed                     |

### 10.2.48.8.10 System Information Block type 7

The system information block type 7 contains the fast changing parameters UL interference and Dynamic persistence level.

| Information Element/Group name                   | Need | Multi                                 | Type and reference                           | Semantics description  |
|--|------|---------------------------------------|--|--|
| CHOICE mode                                      | MP   |                                       |  |  |
| >FDD   |      |                                       |  |  |
| >>UL interference                                | MP   |                                       | UL<br>interference<br>10.3.6.87              |  |
| >TDD   |      |                                       |  | (no data)  |
| PhyCH information elements                       |      |                                       |  |  |
| PRACHs listed in system information block type 5 | MP   | 1<br>to <maxpr<br>ACH&gt;</maxpr<br>  |  | The order of the PRACHs is the same as in system information block type 5 or 5bis. |
| >Dynamic persistence level                       | MP   |                                       | Dynamic<br>persistence<br>level<br>10.3.6.35 |  |
| PRACHs listed in system information block type 6 | ОР   | 1 to<br><maxpra<br>CH&gt;</maxpra<br> |  | The order of the PRACHs is the same as in system information block type 6.         |
| >Dynamic persistence level                       | MP   |                                       | Dynamic<br>persistence<br>level<br>10.3.6.35 |  |
| Expiration Time Factor                           | MD   |                                       | Expiration<br>Time Factor<br>10.3.3.12       | Default is 1.  |

10.2.48.8.11 Void

10.2.48.8.12 Void

10.2.48.8.13 Void

### 10.2.48.8.14 System Information Block type 11

The system information block type 11 contains measurement control information to be used in the cell.

| Information Element/Group name         | Need | Multi | Type and reference                                | Semantics description   |
|--|------|-------|---|---|
| SIB12 Indicator                        | MP   |       | Boolean   | TRUE indicates that SIB12 is broadcast in the cell.   |
| Measurement information elements       |      |       |   |   |
| FACH measurement occasion info         | OP   |       | FACH<br>measuremen<br>t occasion<br>info 10.3.7.8 | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified. |
| Measurement control system information | MP   |       | Measuremen<br>t control<br>system<br>information  | For 1.28 Mcps TDD if the cell<br>is operating in MBSFN only<br>mode the UE behaviour upon<br>reception of this IE is                  |

| Information Element/Group | Need | Multi | Type and                                  | Semantics description   |
|---------------------------|------|-------|---|---|
| name                      |      |       | reference                                 |   |
|                           |      |       | 10.3.7.47                                 | unspecified.  |
| MBSFN frequency list      | OP   |       | MBSFN<br>frequency<br>list<br>10.3.9a.12a | If present contains all neighbouring frequencies of MBSFN clusters operating in MBSFN mode as indicated in subclause 8.1.1.6.3. |

### 10.2.48.8.14a System Information Block type 11bis

The system information block type 11bis contains measurement control information to be used in the cell in addition to System Information Block type 11.

| Information Element/Group name                   | Need | Multi | Type and reference  | Semantics<br>description | Version |
|--|------|-------|---|--------------------------|---------|
| Measurement information elements                 |      |       | Totolono  | Goodipaon                | REL-6   |
| Measurement control system information extension | MP   |       | Measuremen<br>t control<br>system<br>information<br>extension<br>10.3.7.47a |                          | REL-6   |

### 10.2.48.8.15 System Information Block type 12

The system information block type 12 contains measurement control information to be used in connected mode.

| Information Element/Group name         | Need | Multi | Type and reference  | Semantics description |
|--|------|-------|---|-----------------------|
| Measurement information elements       |      |       |   |                       |
| FACH measurement occasion info         | OP   |       | FACH<br>measuremen<br>t occasion<br>info 10.3.7.8             |                       |
| Measurement control system information | MP   |       | Measuremen<br>t control<br>system<br>information<br>10.3.7.47 |                       |

## 10.2.48.8.16 System Information Block type 13

The system information block type 13 contains ANSI-41 system information.

| Information Element/Group name       | Need | Multi                                      | Type and reference   | Semantics description                                 |
|--------------------------------------|------|--|--|---|
| Other information elements           |      |  |  |   |
| CN Information Elements              |      |  |  |   |
| CN Domain system information list    | MP   | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br> |  | Send CN information for each CN domain.               |
| >CN Domain system information        | MP   |  | CN Domain<br>system<br>information<br>10.3.1.2             |   |
| UE Information                       |      |  |  |   |
| UE timers and constants in idle mode | MD   |  | UE timers<br>and<br>constants in<br>idle mode<br>10.3.3.44 | The UE behaviour is unspecified if this IE is absent. |
| Capability update requirement        | MD   |  | Capability update requirement 10.3.3.2                     | Default value is defined in subclause 10.3.3.2        |

### 10.2.48.8.16.1 System Information Block type 13.1

The system information block type 13.1 contains the ANSI-41 RAND information.

| Information Element/Group name | Need | Multi | Type and reference                         | Semantics description |
|--------------------------------|------|-------|--|-----------------------|
| ANSI-41 information elements   |      |       |  |                       |
| ANSI-41 RAND information       | MP   |       | ANSI-41<br>RAND<br>information<br>10.3.9.6 |                       |

### 10.2.48.8.16.2 System Information Block type 13.2

The system information block type 13.2 contains the ANSI-41 User Zone Identification information.

| Information Element/Group name                  | Need | Multi | Type and reference  | Semantics description |
|---|------|-------|---|-----------------------|
| ANSI-41 information elements                    |      |       |   |                       |
| ANSI-41 User Zone<br>Identification information | MP   |       | ANSI-41<br>User Zone<br>Identification<br>information<br>10.3.9.7 |                       |

### 10.2.48.8.16.3 System Information Block type 13.3

The system information block type 13.3 contains the ANSI-41 Private Neighbour List information.

| Information Element/Group name             | Need | Multi | Type and reference   | Semantics description |
|--|------|-------|--|-----------------------|
| ANSI-41 information elements               |      |       |  |                       |
| ANSI-41 Private Neighbour List information | MP   |       | ANSI-41<br>Private<br>Neighbour<br>List<br>information<br>10.3.9.5 |                       |

### 10.2.48.8.16.4 System Information Block type 13.4

The system information block type 13.4 contains the ANSI-41 Global Service Redirection information.

| Information Element/Group    | Need | Multi | Type and    | Semantics description |
|------------------------------|------|-------|-------------|-----------------------|
| name                         |      |       | reference   |                       |
| ANSI-41 information elements |      |       |             |                       |
| ANSI-41 Global Service       | MP   |       | ANSI-41     |                       |
| Redirection information      |      |       | Global      |                       |
|                              |      |       | Service     |                       |
|                              |      |       | Redirection |                       |
|                              |      |       | information |                       |
|                              |      |       | 10.3.9.2    |                       |

### 10.2.48.8.17 System Information Block type 14

NOTE: Only for 3.84 Mcps TDD and 7.68 Mcps TDD.

The system information block type 14 contains parameters for common and dedicated physical channel uplink outer loop power control information to be used in both idle and connected mode.

| Information Element/Group         | Need | Multi           | Type and     | Semantics description |
|-----------------------------------|------|-----------------|--------------|-----------------------|
| name                              |      |                 | reference    |                       |
| PhyCH information elements        |      |                 |              |                       |
| Individual Timeslot interference  | MP   | 1 to            |              |                       |
| list                              |      | <maxts></maxts> |              |                       |
| >Individual Timeslot interference | MP   |                 | Individual   |                       |
|                                   |      |                 | Timeslot     |                       |
|                                   |      |                 | interference |                       |
|                                   |      |                 | 10.3.6.38    |                       |
| Expiration Time Factor            | MD   |                 | Expiration   | Default is 1.         |
|                                   |      |                 | Time Factor  |                       |
|                                   |      |                 | 10.3.3.12    |                       |

#### 10.2.48.8.18 System Information Block type 15

The system information block type 15 contains information useful for UE-based or UE-assisted positioning methods.

| Information Element/Group name | Need | Multi                     | Type and Reference   | Semantics description  |
|--------------------------------|------|---------------------------|--|--|
| GPS Data ciphering info        | OP   |                           | UE<br>positioning<br>Ciphering<br>info<br>10.3.7.86                              | If this IE is present then the SIB types 15.1, 15.2 & 15.3 are ciphered in accordance with the Data Assistance Ciphering Algorithm specified in [18] |
| Reference position             | MP   |                           | Ellipsoid<br>point with<br>altitude and<br>uncertainty<br>ellipsoid<br>10.3.8.4c | approximate position where the UE is located   |
| GPS reference time             | MP   |                           | UE positioning GPS reference time 10.3.7.96                                      |  |
| Satellite information          | OP   | 1 to<br><maxsat></maxsat> |  | This IE is present whenever bad (failed/failing) satellites are detected by UTRAN [18].  |
| >BadSatID                      | MP   |                           | Enumerated( 063)   |  |

#### 10.2.48.8.18.0 System Information Block type 15bis

The system information block type 15bis contains information useful for UE-based or UE-assisted positioning methods. The content of this SIB is common to all GANSS.

| Information Element/Group name | Need | Type and<br>Reference  | Semantics description                        | Version |
|--------------------------------|------|--|--|---------|
| Reference position             | MP   | Ellipsoid<br>point with<br>altitude and<br>uncertainty<br>ellipsoid<br>10.3.8.4c | approximate position where the UE is located | REL-7   |
| GANSS reference time           | MP   | UE<br>positioning<br>GANSS<br>reference<br>time<br>10.3.7.960                    |  | REL-7   |
| GANSS ionospheric model        | OP   | UE<br>positioning<br>GANSS<br>ionospheric<br>model<br>10.3.7.92a                 |  | REL-7   |

#### 10.2.48.8.18.1 System Information Block type 15.1

The system information block type 15.1 contains information useful for UE positioning DGPS Corrections. The DGPS Corrections message contents are based on a Type-1 message of DGPS specified in [13].

| Information Element/Group name | Need | Multi | Type and Reference  | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| DGPS corrections               | MP   |       | UE<br>positioning<br>GPS DGPS<br>corrections<br>10.3.7.91 |                       |

#### 10.2.48.8.18.1a System Information Block type 15.1bis

The system information block type 15.1bis contains information useful for UE positioning DGANSS Corrections. The DGANSS Corrections message contents are based on a Type-1 message of DGANSS specified in [13]. The content of this SIB is GNSS specific.

| Information Element/Group name | Need | Type and<br>Reference                                    | Semantics description | Version |
|--------------------------------|------|--|-----------------------|---------|
| DGANSS corrections             | MP   | UE<br>positioning<br>DGANSS<br>corrections<br>10.3.7.91b |                       | REL-7   |

#### 10.2.48.8.18.2 System Information Block type 15.2

The system information block type 15.2 contains information useful for GPS Navigation Model. These IE fields are based on information extracted from the subframes 1 to 3 of the GPS navigation message [12].

| Information Element/Group name                   | Need | Multi | Type and Reference  | Semantics description  |
|--|------|-------|---|--|
| Transmission TOW                                 | MP   |       | Integer<br>(0604799)  | The approximate GPS time-of-<br>week when the message is<br>broadcast.<br>in seconds |
| SatID  | MP   |       | Integer<br>(063)  | Satellite ID   |
| GPS Ephemeris and Clock<br>Correction Parameters | MP   |       | UE positioning GPS Ephemeris and Clock Correction parameters 10.3.7.91a |  |

### 10.2.48.8.18.2a System Information Block type 15.2bis

The system information block type 15.2bis contains information useful for GANSS Navigation Model. The content of this SIB is GNSS specific.

| Information Element/Group name | Need | Type and Reference  | Semantics description | Version |
|--------------------------------|------|---|-----------------------|---------|
| GANSS Navigation Model         | MP   | UE<br>positioning<br>GANSS<br>navigation<br>model<br>10.3.7.94a |                       | REL-7   |

### 10.2.48.8.18.3 System Information Block type 15.3

The system information block type 15.3 contains information useful for ionospheric delay, UTC offset, and Almanac. These IEs contain information extracted from the subframes 4 and 5 of the GPS navigation message, [12].

| Information Element/Group name      | Need           | Multi | Type and Reference  | Semantics description  |
|-------------------------------------|----------------|-------|---|--|
| Transmission TOW                    | MP             |       | Integer<br>(0604799)  | The approximate GPS time-of-<br>week when the message is<br>broadcast.<br>in seconds |
| GPS Almanac and Satellite<br>Health | OP             |       | UE positioning GPS almanac 10.3.7.89                          |  |
| GPS ionospheric model               | OP             |       | UE<br>positioning<br>GPS<br>ionospheric<br>model<br>10.3.7.92 |  |
| GPS UTC model                       | OP             |       | UE<br>positioning<br>GPS UTC<br>model<br>10.3.7.97            |  |
| SatMask                             | CV-<br>Almanac |       | Bit<br>string(132)  | indicates the satellites that contain the pages being broadcast in this data set     |
| LSB TOW                             | CV-<br>Almanac |       | Bit string(8)   |  |

| Condition | Explanation   |
|-----------|---|
| Almanac   | This IE is mandatory present if the IE "GPS Almanac |
|           | and Satellite Health" is present                    |

### 10.2.48.8.18.3a System Information Block type 15.3bis

The system information block type 15.3bis contains information useful for GANSS time model, UTC offset and Almanac. The content of this SIB is GNSS specific.

| Information Element/Group name | Need | Multi                                   | Type and<br>Reference                                  | Semantics description | Version |
|--------------------------------|------|---|--|-----------------------|---------|
| GANSS Almanac                  | OP   |   | UE<br>positioning<br>GANSS<br>almanac<br>10.3.7.89a    |                       | REL-7   |
| GANSS time models              | OP   | 1 to<br><maxgan<br>SS-1&gt;</maxgan<br> |  |                       | REL-7   |
| >GANSS time model              | OP   |   | UE<br>positioning<br>GANSS time<br>model<br>10.3.7.97a |                       | REL-7   |
| GANSS UTC model                | OP   |   | UE<br>positioning<br>GANSS UTC<br>model<br>10.3.7.97c  |                       | REL-7   |

#### 10.2.48.8.18.4 System Information Block type 15.4

The system information block type 15.4 contains ciphering information for System Information Block type 15.5 and information useful for OTDOA UE-assisted Positioning method.

| Information Element/Group name        | Need | Multi | Type and<br>Reference  | Semantics description   |
|---------------------------------------|------|-------|--|---|
| OTDOA Data ciphering info             | OP   |       | UE<br>positioning<br>Ciphering<br>info<br>10.3.7.86                                | If this IE is present then the for UE-based the System Information Block type 15.5 is ciphered in accordance with the Data Assistance Ciphering Algorithm specified in [18] |
| OTDOA assistance data for UE-assisted | MP   |       | UE<br>positioning<br>OTDOA<br>assistance<br>data for UE-<br>assisted<br>10.3.7.103 |   |

#### 10.2.48.8.18.4a System Information Block type 15.5

The system information block type 15.5 contains information useful for OTDOA UE-based Positioning method.

| Information Element/Group     | Need | Multi | Type and     | Semantics description |
|-------------------------------|------|-------|--------------|-----------------------|
| name                          |      |       | Reference    |                       |
| OTDOA assistance data for UE- | MP   |       | UE           |                       |
| based                         |      |       | positioning  |                       |
|                               |      |       | OTDOA        |                       |
|                               |      |       | assistance   |                       |
|                               |      |       | data for UE- |                       |
|                               |      |       | based        |                       |
|                               |      |       | 10.3.7.103a  |                       |

#### 10.2.48.8.18.5 System Information Block type 15.6

The system information block type 15.6 contains information useful for acquisition of GANSS signals. The content of this SIB is GNSS specific.

| Information Element/Group name          | Need | Multi | Type and Reference   | Semantics description  | Version |
|---|------|-------|--|--|---------|
| GANSS TOD                               | MP   |       | Integer(086<br>399)  | GANSS Time of Day in seconds where GANSS reference measurement information is valid. | REL-7   |
| GANSS reference measurement information | MP   |       | UE positioning GANSS reference measuremen t information 10.3.7.88b |  | REL-7   |

#### 10.2.48.8.18.6 System Information Block type 15.7

The system information block type 15.7 contains data bits which can be used for data wipe-off. The content of this SIB is GNSS specific.

| Information Element/Group name | Need | Multi | Type and<br>Reference                               | Semantics description | Version |
|--------------------------------|------|-------|---|-----------------------|---------|
| GANSS data bit assistance      | MP   |       | UE positioning GANSS data bit assistance 10.3.7.97b |                       | REL-7   |

#### 10.2.48.8.18.7 System Information Block type 15.8

The system information block type 15.8 contains ciphering information and real-time integrity information. The content of this SIB is GNSS specific.

| Information Element/Group<br>name | Need | Multi | Type and<br>Reference  | Semantics description  | Version |
|-----------------------------------|------|-------|--|--|---------|
| GANSS Data ciphering info         | OP   |       | UE<br>positioning<br>Ciphering<br>info<br>10.3.7.86              | If this IE is present then the<br>SIB types 15.1bis, 15.2bis,<br>15.3bis, 15.6 and 15.7 are<br>ciphered in accordance with<br>the Data Assistance Ciphering<br>Algorithm specified in [18] | REL-7   |
| GANSS real-time integrity         | OP   |       | UE<br>positioning<br>GANSS real-<br>time integrity<br>10.3.7.95b |  | REL-7   |

### 10.2.48.8.19 System Information Block type 16

The system information block type 16 contains radio bearer, transport channel and physical channel parameters to be stored by UE in idle and connected mode for use during handover to UTRAN.

| Information Element/Group name | Need | Multi | Type and Reference                                | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| RB information elements        |      |       |   |                       |
| Predefined RB configuration    | MP   |       | Predefined<br>RB<br>configuration<br>10.3.4.7     |                       |
| TrCH Information Elements      |      |       |   |                       |
| Predefined TrCH configuration  | MP   |       | Predefined<br>TrCH<br>configuration<br>10.3.5.9   |                       |
| PhyCH Information Elements     |      |       |   |                       |
| Predefined PhyCH configuration | MP   |       | Predefined<br>PhyCH<br>configuration<br>10.3.6.56 |                       |

## 10.2.48.8.20 System Information Block type 17

NOTE: Only for TDD.

The system information block type 17 contains fast changing parameters for the configuration of the shared physical channels to be used in connected mode.

| Information Element/Group name | Need | Multi | Type and reference                                   | Semantics description  | Version |
|--------------------------------|------|-------|--|------------------------|---------|
| PhyCH information elements     |      |       |  |                        |         |
| PUSCH system information       | OP   |       | PUSCH<br>system<br>information<br>10.3.6.66          |                        |         |
| PUSCH system information VHCR  | OP   |       | PUSCH<br>system<br>information<br>VHCR<br>10.3.6.66a | Only for 7.68 Mcps TDD | REL-7   |
| PDSCH system information       | OP   |       | PDSCH<br>system<br>information<br>10.3.6.46          |                        |         |

### 10.2.48.8.21 System Information Block type 18

The System Information Block type 18 contains PLMN identities of neighbouring cells to be considered in idle mode as well as in connected mode.

| Information Element/Group name               | Need | Multi | Type and reference  | Semantics description | Version |
|--|------|-------|---|-----------------------|---------|
| Idle mode PLMN identities                    | OP   |       | PLMN<br>identities of<br>neighbour<br>cells<br>10.3.7.53a | decemption            |         |
| Connected mode PLMN identities               | OP   |       | PLMN<br>identities of<br>neighbour<br>cells<br>10.3.7.53a |                       |         |
| Idle mode PLMN identities for SIB 11bis      | OP   |       | PLMN identities of neighbour cells 10.3.7.53a             |                       | REL-6   |
| Connected mode PLMN identities for SIB 11bis | OP   |       | PLMN identities of neighbour cells                        |                       | REL-6   |

## 10.2.49 SYSTEM INFORMATION CHANGE INDICATION

This message is used to send information on FACH or HS-DSCH (FDD only) to the UEs in state CELL\_FACH, CELL\_PCH (FDD only), or CELL\_DCH(TDD only) about coming modification of the system information.

RLC-SAP: TM

Logical channel: BCCH

Direction: UTRAN  $\rightarrow$  UE

| Information Element/Group  | Need | Multi | Type and      | Semantics description |
|----------------------------|------|-------|---------------|-----------------------|
| name                       |      |       | reference     |                       |
| Message Type               | MP   |       | Message       |                       |
|                            |      |       | Туре          |                       |
| Other information elements |      |       |               |                       |
| BCCH modification info     | MP   |       | BCCH          |                       |
|                            |      |       | modification  |                       |
|                            |      |       | info 10.3.8.1 |                       |

If the encoded message does not fill a transport block, the RRC layer shall insert padding according to subclause 12.1.

## 10.2.50 TRANSPORT CHANNEL RECONFIGURATION

This message is used by UTRAN to configure the transport channel of a UE. This also includes a possible reconfiguration of physical channels. The message can also be used to assign a TFC subset and reconfigure physical channel.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN  $\rightarrow$  UE

| Information Element/Group name | Need | Multi | Type and reference                                | Semantics description   | Version |
|--------------------------------|------|-------|---|---|---------|
| Message Type                   | MP   |       | Message   | u00011p11011  |         |
|                                |      |       | Type  |   |         |
| UE Information Elements        |      |       |   |   |         |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36     |   |         |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16              |   |         |
| Integrity protection mode info | OP   |       | Integrity<br>protection<br>mode info<br>10.3.3.19 | The UTRAN<br>should not include<br>this IE unless it is<br>performing an<br>SRNS relocation                         |         |
| Ciphering mode info            | OP   |       | Ciphering<br>mode info<br>10.3.3.5                | The UTRAN should not include this IE unless it is performing an SRNS relocation and a change in ciphering algorithm |         |
| Activation time                | MD   |       | Activation time 10.3.3.1                          | Default value is "now"  |         |
| Delay restriction flag         | OP   |       | Enumerated<br>(TRUE)                              | This IE is always set to TRUE and included if the activation time is restricted according to subclause 8.6.3.1      | REL-6   |
| New U-RNTI                     | OP   |       | U-RNTI<br>10.3.3.47                               |   |         |
| New C-RNTI                     | OP   |       | C-RNTI<br>10.3.3.8                                |   |         |
| New DSCH-RNTI                  | OP   |       | DSCH-RNTI<br>10.3.3.9a                            | Should not be set<br>in FDD. If<br>received the UE<br>should ignore it  |         |

| Information Element/Group name                                   | Need                | Multi                                       | Type and reference                                    | Semantics description  | Version |
|--|---------------------|---|---|--|---------|
| New H-RNTI   | OP                  |   | H-RNTI<br>10.3.3.14a                                  |  | REL-5   |
| New Primary E-RNTI   | OP                  |   | E-RNTI<br>10.3.3.10a                                  |  | REL-6   |
| New Secondary E-RNTI   | OP                  |   | E-RNTI<br>10.3.3.10a                                  | FDD only   | REL-6   |
| RRC State Indicator  | MP                  |   | RRC State<br>Indicator<br>10.3.3.35a                  |  |         |
| UE Mobility State Indicator                                      | CV-<br>FACH_PC<br>H |   | Enumerated<br>(High-<br>mobilityDete<br>cted)         | Absence of this IE implies that, according to [4], the UE shall consider itself being in the mobility state the UE has maintained in CELL_DCH state or being not in high mobility state after the state transition, if applicable. | REL-7   |
| UTRAN DRX cycle length coefficient                               | OP                  |   | UTRAN DRX<br>cycle length<br>coefficient<br>10.3.3.49 |  |         |
| CN Information Elements  |                     |   |   |  |         |
| CN Information info  | OP                  |   | CN<br>Information<br>info 10.3.1.3                    |  |         |
| UTRAN mobility information elements                              |                     |   |   |  |         |
| URA identity   | OP                  |   | URA identity<br>10.3.2.6                              |  |         |
| RNC support for change of UE capability                          | OP                  |   | Boolean   | Should be included if the message is used to perform an SRNS relocation  | REL-7   |
| Reconfiguration in response to requested change of UE capability | OP                  |   | Enumerated<br>(TRUE)                                  |  | REL-7   |
| RB information elements  |                     |   |   |  |         |
| Downlink counter   | OP                  |   |   |  |         |
| synchronisation info >RB with PDCP information list              | OP                  | 1 to<br><maxrball<br>RABs&gt;</maxrball<br> |   |  |         |
| >>RB with PDCP information                                       | MP                  |   | RB with<br>PDCP<br>information<br>10.3.4.22           | This IE is needed<br>for each RB<br>having PDCP in<br>the case of<br>lossless SRNS<br>relocation   |         |
|  | OP                  |   |   |  | REL-5   |
| >>PDCP context relocation info                                   | OP                  |   | PDCP<br>context<br>relocation<br>info<br>10.3.4.1a    | This IE is needed<br>for each RB<br>having PDCP and<br>performing PDCP<br>context relocation   | REL-5   |
| TrCH Information Elements  |                     |   |   |  |         |
| Uplink transport channels  |                     |   |   |  | ]       |
| UL Transport channel   | OP                  |   | UL Transport  |  |         |

| Information Element/Group name                                     | Need | Multi  | Type and reference  | Semantics description                                      | Version |
|--|------|--|---|--|---------|
| information common for all transport channels                      |      |  | channel information common for all transport channels 10.3.5.24                               |  |         |
| Added or Reconfigured TrCH information list                        | OP   | 1 to<br><maxtrch< td=""><td></td><td></td><td></td></maxtrch<> |   |  |         |
| >Added or Reconfigured UL<br>TrCH information                      | MP   |  | Added or<br>Reconfigure<br>d UL TrCH<br>information<br>10.3.5.2                               |  |         |
| Downlink transport channels  |      |  |   |  |         |
| DL Transport channel information common for all transport channels | OP   |  | DL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.6 |  |         |
| Added or Reconfigured TrCH information list                        | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br>                          |   |  |         |
| >Added or Reconfigured DL<br>TrCH information                      | MP   |  | Added or<br>Reconfigure<br>d DL TrCH<br>information<br>10.3.5.1                               |  |         |
| PhyCH information elements   |      |  |   |  |         |
| Frequency info   | OP   |  | Frequency<br>info<br>10.3.6.36  |  |         |
| Multi-frequency Info   | OP   |  | Multi-<br>frequency<br>Info<br>10.3.6.39a   | This IE is used for<br>1.28 Mcps TDD<br>only               | REL-7   |
| DTX-DRX timing information   | OP   |  | DTX-DRX<br>timing<br>information<br>10.3.6.34b  |  | REL-7   |
| DTX-DRX Information  | OP   |  | DTX-DRX<br>Information<br>10.3.6.34a  |  | REL-7   |
| HS-SCCH less Information   | OP   |  | HS-SCCH<br>less<br>Information<br>10.3.6.36ab   |  | REL-7   |
| MIMO parameters  | OP   |  | MIMO<br>parameters<br>10.3.6.41a  |  | REL-7   |
| Uplink radio resources  Maximum allowed UL TX power                | MD   |  | Maximum<br>allowed UL<br>TX power<br>10.3.6.39  | Default value is<br>the existing<br>maximum UL TX<br>power |         |
| Uplink DPCH info   | OP   |  | Uplink<br>DPCH info<br>10.3.6.88  |  |         |
| E-DCH Info   | OP   |  | E-DCH Info<br>10.3.6.97   |  | REL-6   |
| Downlink radio resources   | OD   |  | Day 11 1  |  | DE: 5   |
| Downlink HS-PDSCH<br>Information                                   | OP   |  | Downlink<br>HS-PDSCH  |  | REL-5   |

| Information Element/Group name                  | Need | Multi                   | Type and reference   | Semantics description                         | Version |
|---|------|-------------------------|--|---|---------|
|   |      |                         | Information<br>10.3.6.23a                                      |   |         |
| Downlink information common for all radio links | OP   |                         | Downlink information common for all radio links 10.3.6.24      |   |         |
| Downlink information per radio link list        | OP   | 1 to<br><maxrl></maxrl> |  | Send downlink information for each radio link |         |
| >Downlink information for each radio link       | MP   |                         | Downlink<br>information<br>for each<br>radio link<br>10.3.6.27 |   |         |
| MBMS PL Service Restriction Information         | OP   |                         | Enumerated (TRUE)  |   | REL-6   |

| Condition | Explanation   |
|-----------|---|
| FACH_PCH  | This IE is mandatory default when a transition to CELL_FACH, URA_PCH or CELL_PCH is requested by the message and is not needed otherwise. |

## 10.2.51 TRANSPORT CHANNEL RECONFIGURATION COMPLETE

This message is sent from the UE when a transport channel reconfiguration has been done.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE  $\rightarrow$  UTRAN

| Information Element/Group name              | Need | Multi | Type and reference   | Semantics description | Version |
|---|------|-------|--|-----------------------|---------|
| Message Type                                | MP   |       | Message<br>Type  |                       |         |
| UE information elements                     |      |       |  |                       |         |
| RRC transaction identifier                  | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36              |                       |         |
| Integrity check info                        | CH   |       | Integrity<br>check info<br>10.3.3.16                       |                       |         |
| Uplink integrity protection activation info | OP   |       | Integrity<br>protection<br>activation<br>info<br>10.3.3.17 |                       |         |
| CHOICE mode                                 | OP   |       |  |                       |         |
| >FDD  |      |       |  | (no data)             |         |
| >TDD  |      |       |  |                       |         |
| >>CHOICE TDD option                         | MP   |       |  |                       | REL-4   |
| >>>3.84 Mcps TDD                            |      |       |  |                       | REL-4   |
| >>>Uplink Timing Advance                    | OP   |       | Uplink<br>Timing<br>Advance<br>10.3.6.95                   |                       |         |
| >>>Extended Uplink Timing Advance           | OP   |       | Extended<br>Uplink<br>Timing                               |                       | REL-7   |

| Information Element/Group name       | Need | Multi                                       | Type and reference                          | Semantics description  | Version |
|--------------------------------------|------|---|---|--|---------|
|                                      |      |   | Advance<br>10.3.6.95a                       |  |         |
| >>>7.68 Mcps TDD                     |      |   |   |  | REL-7   |
| >>>Extended Uplink Timing Advance    | OP   |   | Extended Uplink Timing Advance 10.3.6.95a   |  | REL-7   |
| >>>1.28 Mcps TDD                     |      |   |   | (no data)  | REL-4   |
| Other information elements           |      |   |   |  | REL-7   |
| Deferred measurement control reading | MD   |   | Enumerated<br>(TRUE)                        | Indicates the UE has not read SIB11, SIB11bis and SIB12, if available. Default value is FALSE                        | REL-7   |
| RB Information elements              |      |   |   |  |         |
| COUNT-C activation time              | OP   |   | Activation<br>time<br>10.3.3.1              | Used for radio bearers mapped on RLC-TM. Only applicable if the UE is moving to CELL_DCH state due to this procedure |         |
| Uplink counter synchronisation info  | OP   |   |   |  |         |
| >RB with PDCP information list       | OP   | 1 to<br><maxrball<br>RABs&gt;</maxrball<br> |   |  |         |
| >>RB with PDCP information           | MP   |   | RB with<br>PDCP<br>information<br>10.3.4.22 |  |         |
| >START list                          | MP   | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br>  |   | START [40]<br>values for all CN<br>domains.  |         |
| >>CN domain identity                 | MP   |   | CN domain identity 10.3.1.1                 |  |         |
| >>START                              | MP   |   | START<br>10.3.3.38                          | START value to be used in this CN domain.  |         |

# 10.2.52 TRANSPORT CHANNEL RECONFIGURATION FAILURE

This message is sent by UE if the configuration given by UTRAN is unacceptable or if the UE failed to establish the physical channel(s).

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Message Type                   | MP   |       | Message<br>Type    |                       |
| UE information elements        |      |       |                    |                       |
| RRC transaction identifier     | MP   |       | RRC<br>transaction |                       |

| Information Element/Group | Need | Multi | Type and    | Semantics description |
|---------------------------|------|-------|-------------|-----------------------|
| name                      |      |       | reference   |                       |
|                           |      |       | identifier  |                       |
|                           |      |       | 10.3.3.36   |                       |
| Integrity check info      | CH   |       | Integrity   |                       |
|                           |      |       | check info  |                       |
|                           |      |       | 10.3.3.16   |                       |
| Failure cause             | MP   |       | Failure     |                       |
|                           |      |       | cause and   |                       |
|                           |      |       | error       |                       |
|                           |      |       | information |                       |
|                           |      |       | 10.3.3.14   |                       |

### 10.2.53 TRANSPORT FORMAT COMBINATION CONTROL

This message is sent by UTRAN to control the uplink transport format combination within the allowed transport format combination set. This message has different structures depending if the message is sent on transparent (TM) or non-transparent mode (AM or UM).

RLC-SAP: AM or UM
Logical channel: DCCH

Direction: UTRAN→UE

| Information Element/Group      | Need | Multi | Type and     | Semantics description  |
|--------------------------------|------|-------|--------------|------------------------|
| name                           |      |       | reference    |                        |
| Message Type                   | MP   |       | Message      |                        |
|                                |      |       | Type         |                        |
| UE information elements        |      |       |              |                        |
| RRC transaction identifier     | MP   |       | RRC          |                        |
|                                |      |       | transaction  |                        |
|                                |      |       | identifier   |                        |
|                                |      |       | 10.3.3.36    |                        |
| Integrity check info           | CH   |       | Integrity    |                        |
|                                |      |       | check info   |                        |
|                                |      |       | 10.3.3.16    |                        |
| TrCH information elements      |      |       |              |                        |
| CHOICE mode                    | MP   |       |              |                        |
| >FDD                           |      |       |              | (no data)              |
| >TDD                           |      |       |              |                        |
| >>TFCS Id                      | OP   |       | Transport    |                        |
|                                |      |       | Format       |                        |
|                                |      |       | Combination  |                        |
|                                |      |       | Set Identity |                        |
|                                |      |       | 10.3.5.21    |                        |
| DPCH/PUSCH TFCS in uplink      | MP   |       | Transport    |                        |
|                                |      |       | Format       |                        |
|                                |      |       | Combination  |                        |
|                                |      |       | subset       |                        |
|                                |      |       | 10.3.5.22    |                        |
| Activation time for TFC subset | MD   |       | Activation   | Default value is "now" |
|                                |      |       | time         |                        |
|                                |      |       | 10.3.3.1     |                        |
| TFC Control duration           | OP   |       | TFC Control  |                        |
|                                |      |       | duration     |                        |
|                                |      |       | 10.3.6.80    |                        |

In case of transparent mode signalling the following message structure shall be used:

RLC-SAP: TM

Logical channel: DCCH

Direction: UTRAN→UE

| Information Element/Group | Need | Multi | Type and  | Semantics description |
|---------------------------|------|-------|-----------|-----------------------|
| name                      |      |       | reference |                       |
| TFC subset identity       | MP   |       | INTEGER   |                       |
| _                         |      |       | (07)      |                       |

The encoding of this message is specified in subclause 12.4.1.1.

### 10.2.54 TRANSPORT FORMAT COMBINATION CONTROL FAILURE

This message is sent to indicate that a received TRANSPORT FORMAT COMBINATION CONTROL message could not be handled by the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| Message Type                   | MP   |       | Message<br>Type   |                       |
| UE information elements        |      |       | 1,750   |                       |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36             |                       |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16                      |                       |
| Failure cause                  | MP   |       | Failure<br>cause and<br>error<br>information<br>10.3.3.14 |                       |

### 10.2.55 UE CAPABILITY ENQUIRY

The UE CAPABILITY ENQUIRY is used by the UTRAN to enquire inter-RAT classmarks from the UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN  $\rightarrow$  UE

| Information Element/Group name | Need | Multi | Type and reference                            | Semantics description   |
|--------------------------------|------|-------|---|---|
| Message Type                   | MP   |       | Message                                       |   |
|                                |      |       | Type  |   |
| UE information elements        |      |       |   |   |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36 |   |
| Integrity check info           | СН   |       | Integrity<br>check info<br>10.3.3.16          | Integrity check info is included if integrity protection is applied |
| Capability update requirement  | MP   |       | Capability update requirement 10.3.3.2        |   |

## 10.2.56 UE CAPABILITY INFORMATION

This message is sent by UE to convey UE specific capability information to the UTRAN.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE  $\rightarrow$  UTRAN

| Information Element/Group name | Need | Multi   | Type and reference | Semantics description              |
|--------------------------------|------|---|--------------------|------------------------------------|
|                                | MD   |   |                    |                                    |
| Message Type                   | MP   |   | Message            |                                    |
|                                |      |   | Туре               |                                    |
| UE information elements        |      |   |                    |                                    |
| RRC transaction identifier     | OP   |   | RRC                |                                    |
|                                |      |   | transaction        |                                    |
|                                |      |   | identifier         |                                    |
|                                |      |   | 10.3.3.36          |                                    |
| Integrity check info           | CH   |   | Integrity          | Integrity check info is included   |
|                                |      |   | check info         | if integrity protection is applied |
|                                |      |   | 10.3.3.16          |                                    |
| UE radio access capability     | OP   |   | UE radio           |                                    |
|                                |      |   | access             |                                    |
|                                |      |   | capability         |                                    |
|                                |      |   | 10.3.3.42          |                                    |
| UE radio access capability     | OP   |   | UE radio           |                                    |
| extension                      |      |   | access             |                                    |
|                                |      |   | capability         |                                    |
|                                |      |   | extension          |                                    |
|                                |      |   | 10.3.3.42a         |                                    |
| Other information elements     |      |   |                    |                                    |
| UE system specific capability  | OP   | 1 to  |                    |                                    |
|                                |      | <maxinter< td=""><td></td><td></td></maxinter<> |                    |                                    |
|                                |      | SysMessa  |                    |                                    |
|                                |      | ges>  |                    |                                    |
| >Inter-RAT UE radio access     | MP   | _   | Inter-RAT          |                                    |
| capability                     |      |   | UE radio           |                                    |
|                                |      |   | access             |                                    |
|                                |      |   | capability         |                                    |
|                                |      |   | 10.3.8.7           |                                    |

## 10.2.57 UE CAPABILITY INFORMATION CONFIRM

This message is sent by UTRAN to confirm that UE capability information has been received.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN  $\rightarrow$  UE

| Information Element/Group name | Need | Multi | Type and reference                            | Semantics description   |
|--------------------------------|------|-------|---|---|
| Message Type                   | MP   |       | Message<br>Type                               |   |
| UE information elements        |      |       |   |   |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36 |   |
| Integrity check info           | СН   |       | Integrity check info                          | Integrity check info is included if integrity protection is applied |

| Information Element/Group                    | Need | Multi | Type and   | Semantics description  |
|--|------|-------|--|--|
| name   |      |       | reference  |  |
|  |      |       | 10.3.3.16  |  |
| Acceptance of requested change of capability | OP   |       | Enumerated<br>(Refused,<br>Accepted,<br>Accepted<br>with<br>reconfigurati<br>on to follow) | Included if the message was sent in response to a UE request for a capability change in connected mode |

### 10.2.58 UPLINK DIRECT TRANSFER

This message is used to transfer NAS messages for an existing signalling connection.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE ->UTRAN

| Information Element/Group name   | Need | Multi | Type and reference                          | Semantics description   |
|----------------------------------|------|-------|---|---|
| Message Type                     | MP   |       | Message<br>Type                             |   |
| UE information elements          |      |       |   |   |
| Integrity check info             | СН   |       | Integrity<br>check info<br>10.3.3.16        | Integrity check info is included if integrity protection is applied |
| CN information elements          |      |       |   |   |
| CN domain identity               | MP   |       | CN domain identity 10.3.1.1                 |   |
| NAS message                      | MP   |       | NAS<br>message<br>10.3.1.8                  |   |
| Measurement information elements |      |       |   |   |
| Measured results on RACH         | OP   |       | Measured<br>results on<br>RACH<br>10.3.7.45 |   |

## 10.2.59 UPLINK PHYSICAL CHANNEL CONTROL

NOTE: Only for TDD.

This message is used to transfer uplink physical channel parameters to the UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

| Information Element/Group name | Need | Multi | Type and<br>Reference                         | Semantics description | Version |
|--------------------------------|------|-------|---|-----------------------|---------|
| Message Type                   | MP   |       | Message<br>Type                               |                       |         |
| UE information elements        |      |       |   |                       |         |
| RRC transaction identifier     | MP   |       | RRC<br>transaction<br>identifier<br>10.3.3.36 |                       |         |

| Information Element/Group name   | Need      | Multi | Type and Reference       | Semantics<br>description | Version            |
|--|-----------|-------|--------------------------|--------------------------|--------------------|
| Integrity check info   | OP        |       | Integrity                | 300000                   |                    |
|  |           |       | check info               |                          |                    |
|  |           |       | 10.3.3.16                |                          |                    |
| PhyCH information elements   |           |       |                          |                          |                    |
| CCTrCH power control info  | OP        |       | CCTrCH                   | Power control            |                    |
|  |           |       | power                    | information for          |                    |
|  |           |       | control info<br>10.3.6.8 | one CCTrCH               |                    |
| Special Burst Scheduling   | OP        |       | Special                  | UL Special Burst         |                    |
| Special Burst Corrodaling  |           |       | Burst                    | generation period        |                    |
|  |           |       | Scheduling               | in radio frames          |                    |
|  |           |       | 10.3.6.75a               |                          |                    |
| CHOICE TDD option  | MP        |       |                          |                          | REL-4              |
| >3.84 Mcps TDD   |           |       |                          |                          | REL-4              |
| >>Alpha  | OP        |       | Alpha                    |                          |                    |
|  | 0.0       |       | 10.3.6.5                 |                          |                    |
| >>Timing Advance Control   | OP        |       | UL Timing<br>Advance     |                          |                    |
|  |           |       | Control                  |                          |                    |
|  |           |       | 10.3.6.96                |                          |                    |
| >>PRACH Constant Value   | OP        |       | Constant                 | Operator                 |                    |
|  | _         |       | value TDD                | controlled PRACH         |                    |
|  |           |       | 10.3.6.11a               | Margin                   |                    |
| >>PUSCH Constant Value   | OP        |       | Constant                 | Operator                 |                    |
|  |           |       | value TDD                | controlled PUSCH         |                    |
| 115 50 1 1 1   | 0) / /DD/ |       | 10.3.6.11a               | Margin                   | 55. 4              |
| >>UE positioning related   | CV-IPDLs  |       |                          |                          | REL-4              |
| parameters   | MP        |       | Alpha                    |                          | REL-4              |
| >>>IPDL-Alpha  | IVIP      |       | 10.3.6.5                 |                          | KEL-4              |
| >>>Max power increase  | MP        |       | Integer (03)             | In dB                    | REL-4              |
| >> HS-SICH power control info  | OP        |       | HS-SICH                  | Only applies to          | REL-5              |
| The state of the s |           |       | Power                    | TDD 3.84 Mcps            |                    |
|  |           |       | Control Info             |                          |                    |
|  |           |       | 10.3.6.36b               |                          |                    |
| >7.68 Mcps TDD   |           |       |                          |                          | REL-7              |
| >>Alpha  | OP        |       | Alpha                    |                          | REL-7              |
| >>Timing Advance Control   | OP        |       | 10.3.6.5<br>UL Timing    |                          | REL-7              |
| >> Tilling Advance Control   | Oi        |       | Advance                  |                          | NEL-7              |
|  |           |       | Control                  |                          |                    |
|  |           |       | 10.3.6.96                |                          |                    |
| >>PRACH Constant Value   | OP        |       | Constant                 | Operator                 | REL-7              |
|  |           |       | value TDD                | controlled PRACH         |                    |
|  |           |       | 10.3.6.11a               | Margin                   |                    |
| >>PUSCH Constant Value   | OP        |       | Constant                 | Operator                 | REL-7              |
|  |           |       | value TDD<br>10.3.6.11a  | controlled PUSCH         |                    |
| >>UE positioning related   | CV-IPDLs  |       | 10.3.0.11a               | Margin                   | REL-4              |
| parameters   | OV II DES |       |                          |                          | \_L                |
| >>>IPDL-Alpha  | MP        |       | Alpha                    |                          | REL-4              |
| ,  |           |       | 10.3.6.5                 |                          |                    |
| >>>Max power increase  | MP        |       | Integer (03)             | In dB                    | REL-4              |
| >> HS-SICH power control info  | OP        |       | HS-SICH                  | Only applies to          | REL-5              |
|  |           |       | Power                    | TDD 7.68 Mcps            |                    |
|  |           |       | Control Info             |                          |                    |
| s 1 20 Mone TDD  |           |       | 10.3.6.36b               |                          | DEL 4              |
| >1.28 Mcps TDD >>Uplink synchronisation  | MD        |       | +                        | Default: Uplink          | REL-4<br>REL-4     |
| parameters   | טועו      |       |                          | synchronisation          | I\LL <del>-4</del> |
| Paramotoro   |           |       |                          | step size 1.             |                    |
|  |           |       |                          | Uplink                   |                    |
|  |           |       |                          | synchronisation          |                    |
|  |           |       |                          | frequency 1.             |                    |
| >>>Uplink synchronisation step   | MP        |       | Integer(18)              | This parameter           | REL-4              |

| Information Element/Group name      | Need | Multi | Type and Reference                  | Semantics description  | Version |
|-------------------------------------|------|-------|-------------------------------------|--|---------|
| size                                |      |       |                                     | specifies the step<br>size to be used for<br>the adjustment of<br>the uplink<br>transmission<br>timing |         |
| >>>Uplink synchronisation frequency | MP   |       | Integer(18)                         | This parameter specifies the frequency of the adjustment of the uplink transmission timing             | REL-4   |
| >>PRX <sub>HS-SICH</sub>            | OP   |       | Integer<br>(-12058 by<br>step of 1) | In dBm. Desired power level for HS-SICH.   | REL-6   |
| >>TPC step size                     | OP   |       | Integer<br>(1, 2, 3)                | In dB. For HS-<br>SICH   | REL-6   |

| Condition | Explanation   |
|-----------|---|
| IPDLs     | This IE is present only if idle periods are applied |

## 10.2.60 URA UPDATE

This message is used by the UE to initiate a URA update procedure.

RLC-SAP: TM

Logical channel: CCCH

Direction: UE→UTRAN

| Information Element/Group name | Need           | Multi | Type and reference                            | Semantics description  | Version |
|--------------------------------|----------------|-------|---|------------------------|---------|
| Message Type                   | MP             |       | Message<br>Type                               |                        |         |
| UE information elements        |                |       |   |                        |         |
| U-RNTI                         | MP             |       | U-RNTI<br>10.3.3.47                           |                        |         |
| RRC transaction identifier     | CV-<br>ProtErr |       | RRC<br>transaction<br>identifier<br>10.3.3.36 |                        |         |
| Integrity check info           | СН             |       | Integrity<br>check info<br>10.3.3.16          |                        |         |
| URA update cause               | MP             |       | URA update cause 10.3.3.46                    |                        |         |
| Protocol error indicator       | MD             |       | Protocol<br>error<br>indicator<br>10.3.3.27   | Default value is FALSE |         |

| Information Element/Group name                      | Need       | Multi | Type and reference                            | Semantics description  | Version |
|---|------------|-------|---|--|---------|
| HS-PDSCH in CELL_PCH and URA_PCH                    | OP         |       | Enumerated<br>(TRUE)                          | This IE indicates whether the UE supports HS-PDSCH reception in CELL_PCH and URA_PCH states. The absence of this IE indicates that the UE does not support HS-PDSCH reception in CELL_PCH or URA_PCH states. | REL-7   |
| HS-PDSCH in CELL_FACH                               | ОР         |       | Enumerated<br>(TRUE)                          | This IE indicates whether the UE supports HS-PDSCH reception in CELL_FACH state. The absence of this IE indicates that the UE does not support HS-PDSCH reception in CELL_FACH state.                        | REL-7   |
| Support for Two DRX schemes in URA_PCH and CELL_PCH | OP         |       | Enumerated<br>(TRUE)                          | The absence of this IE indicates that the UE does not support Two DRX schemes in URA_PCH and CELL_PCH  | REL-7   |
| Other information elements                          |            |       |   |  |         |
| Protocol error information                          | CV-ProtErr |       | Protocol<br>error<br>information<br>10.3.8.12 |  |         |

| Condition | Explanation   |
|-----------|---|
| ProtErr   | The IE is mandatory present if the IE "Protocol error |
|           | indicator" has the value TRUE and not needed          |
|           | otherwise.  |

## 10.2.61 URA UPDATE CONFIRM

This message confirms the URA update procedure and can be used to reallocate new RNTI information for the UE valid after the URA update.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

| Information Element/Group      | Need    | Multi | Type and    | Semantics            | Version |
|--------------------------------|---------|-------|-------------|----------------------|---------|
| name                           |         |       | reference   | description          |         |
| Message Type                   | MP      |       | Message     |                      |         |
|                                |         |       | Туре        |                      |         |
| UE information elements        |         |       |             |                      |         |
| U-RNTI                         | CV-CCCH |       | U-RNTI      |                      |         |
|                                |         |       | 10.3.3.47   |                      |         |
| RRC transaction identifier     | MP      |       | RRC         |                      |         |
|                                |         |       | transaction |                      |         |
|                                |         |       | identifier  |                      |         |
|                                |         |       | 10.3.3.36   |                      |         |
| Integrity check info           | CH      |       | Integrity   | Integrity check      |         |
|                                |         |       | check info  | info is included if  |         |
|                                |         |       | 10.3.3.16   | integrity protection |         |
|                                |         |       |             | is applied           |         |
| Integrity protection mode info | OP      |       | Integrity   | The UTRAN            |         |
| 3 , 1                          |         |       | protection  | should not include   |         |
|                                |         |       | mode info   | this IE unless it is |         |
|                                |         |       | 10.3.3.19   | performing an        |         |
|                                |         |       |             | SRNS relocation      |         |

| Information Element/Group name          | Need | Multi                                       | Type and reference                                    | Semantics description   | Version |
|---|------|---|---|---|---------|
| Ciphering mode info                     | OP   |   | Ciphering<br>mode info<br>10.3.3.5                    | The UTRAN should not include this IE unless it is performing an SRNS relocation and a change in ciphering algorithm |         |
| New U-RNTI                              | OP   |   | U-RNTI<br>10.3.3.47                                   | argonami  |         |
| New C-RNTI                              | OP   |   | C-RNTI<br>10.3.3.8                                    |   |         |
| RRC State Indicator                     | MP   |   | RRC State<br>Indicator<br>10.3.3.35a                  |   |         |
| UTRAN DRX cycle length coefficient      | OP   |   | UTRAN DRX<br>cycle length<br>coefficient<br>10.3.3.49 |   |         |
| CN Information Elements                 |      |   |   |   |         |
| CN Information info                     | OP   |   | CN<br>Information<br>info 10.3.1.3                    |   |         |
| UTRAN mobility information elements     |      |   |   |   |         |
| URA identity                            | OP   |   | URA identity<br>10.3.2.6                              |   |         |
| RNC support for change of UE capability | OP   |   | Boolean   | Should be included if the message is used to perform an SRNS relocation   | REL-7   |
| RB information elements                 |      |   |   |   |         |
| Downlink counter synchronisation info   | OP   |   |   |   |         |
| >RB with PDCP information list          | OP   | 1 to<br><maxrball<br>RABs&gt;</maxrball<br> |   |   |         |
| >>RB with PDCP information              | MP   |   | RB with<br>PDCP<br>information<br>10.3.4.22           | This IE is needed<br>for each RB<br>having PDCP in<br>the case of<br>lossless SRNS<br>relocation                    |         |
|   | OP   |   |   |   | REL-5   |
| >>PDCP context relocation info          | ОР   |   | PDCP<br>context<br>relocation<br>info<br>10.3.4.1a    | This IE is needed<br>for each RB<br>having PDCP and<br>performing PDCP<br>context relocation                        | REL-5   |

| Condition | Explanation  |
|-----------|--|
| CCCH      | This IE is mandatory present when CCCH is used and |
|           | not needed otherwise.                              |

## 10.2.62 UTRAN MOBILITY INFORMATION

This message is used by UTRAN to allocate a new RNTI and to convey other UTRAN mobility related information to a UE.

RLC-SAP: AM or UM
Logical channel: DCCH

Direction: UTRAN→UE

| Information Element/Group name                      | Need     | Multi  | Type and reference     | Semantics description              | Version        |
|---|----------|--|------------------------|------------------------------------|----------------|
| Message Type  | MP       |  | Message                |                                    |                |
| HELG STEELS   |          |  | Туре                   |                                    |                |
| UE Information Elements Integrity check info        | CH       |  | Integrity              |                                    |                |
| integrity check into                                | OH       |  | check info             |                                    |                |
|   |          |  | 10.3.3.16              |                                    |                |
| RRC transaction identifier                          | MP       |  | RRC                    |                                    |                |
|   |          |  | transaction identifier |                                    |                |
|   |          |  | 10.3.3.36              |                                    |                |
| Integrity protection mode info                      | OP       |  | Integrity              | The UTRAN                          |                |
|   |          |  | protection             | should not include                 |                |
|   |          |  | mode info<br>10.3.3.19 | this IE unless it is performing an |                |
|   |          |  | 10.3.3.19              | SRNS relocation                    |                |
| Ciphering mode info                                 | OP       |  | Ciphering              | The UTRAN                          |                |
|   |          |  | mode info              | should not include                 |                |
|   |          |  | 10.3.3.5               | this IE unless it is performing an |                |
|   |          |  |                        | SRNS relocation                    |                |
|   |          |  |                        | and a change in                    |                |
|   |          |  |                        | ciphering                          |                |
| New U-RNTI  | OP       |  | U-RNTI                 | algorithm                          |                |
|   |          |  | 10.3.3.47              |                                    |                |
| New C-RNTI  | OP       |  | C-RNTI                 |                                    |                |
| New H-RNTI  | OP       |  | 10.3.3.8<br>H-RNTI     |                                    | REL-7          |
|   |          |  | 10.3.3.14a             |                                    | 1112           |
| UE Timers and constants in                          | OP       |  | UE Timers              |                                    |                |
| connected mode                                      |          |  | and constants in       |                                    |                |
|   |          |  | connected              |                                    |                |
|   |          |  | mode                   |                                    |                |
|   |          |  | 10.3.3.43              |                                    |                |
| CN Information Elements CN Information info         | OP       |  | CN                     |                                    |                |
| CN Information into                                 |          |  | Information            |                                    |                |
|   |          |  | info full              |                                    |                |
|   |          |  | 10.3.1.3a              |                                    |                |
| UTRAN Information Elements URA identity             | OP       |  | URA identity           |                                    |                |
|   | Or .     |  | 10.3.2.6               |                                    |                |
| RNC support for change of UE                        | OP       |  | Boolean                | Should be                          | REL-7          |
| capability  |          |  |                        | included if the                    |                |
|   |          |  |                        | message is used                    |                |
|   |          |  |                        | to perform an SRNS relocation      |                |
| RB Information elements                             |          |  |                        |                                    |                |
| Downlink counter                                    | OP       |  |                        |                                    |                |
| synchronisation info >RB with PDCP information list | OP       | 1 to   |                        |                                    |                |
| ZAD WILL DOI IIIOIIIIAIIOII IISI                    |          | <maxrball< td=""><td></td><td></td><td></td></maxrball<> |                        |                                    |                |
|   |          | RABs>  |                        |                                    |                |
| >>RB with PDCP information                          | MP       |  | RB with                | This IE is needed                  |                |
|   |          |  | PDCP information       | for each RB<br>having PDCP in      |                |
|   |          |  | 10.3.4.22              | the case of                        |                |
|   |          |  |                        | lossless SRNS                      |                |
|   | OB       |  |                        | relocation                         | DEL E          |
| >>PDCP context relocation info                      | OP<br>OP |  | PDCP                   | This IE is needed                  | REL-5<br>REL-5 |
|   | <u> </u> |  | context                | for each RB                        |                |

| Information Element/Group | Need | Multi | Type and   | Semantics          | Version |
|---------------------------|------|-------|------------|--------------------|---------|
| name                      |      |       | reference  | description        |         |
|                           |      |       | relocation | having PDCP and    |         |
|                           |      |       | info       | performing PDCP    |         |
|                           |      |       | 10.3.4.1a  | context relocation |         |

## 10.2.63 UTRAN MOBILITY INFORMATION CONFIRM

This message is used to confirm the new UTRAN mobility information for the UE.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group     | Need | Multi  | Type and    | Semantics description        | Version |
|-------------------------------|------|--|-------------|------------------------------|---------|
| name                          |      |  | reference   |                              |         |
| Message Type                  | MP   |  | Message     |                              |         |
|                               |      |  | Туре        |                              |         |
| UE information elements       |      |  |             |                              |         |
| RRC transaction identifier    | MP   |  | RRC         |                              |         |
|                               |      |  | transaction |                              |         |
|                               |      |  | identifier  |                              |         |
|                               |      |  | 10.3.3.36   |                              |         |
| Integrity check info          | CH   |  | Integrity   |                              |         |
|                               |      |  | check info  |                              |         |
|                               |      |  | 10.3.3.16   |                              |         |
| Uplink integrity protection   | OP   |  | Integrity   |                              |         |
| activation info               |      |  | protection  |                              |         |
|                               |      |  | activation  |                              |         |
|                               |      |  | info        |                              |         |
|                               |      |  | 10.3.3.17   |                              |         |
| Other Information<br>Elements |      |  |             |                              | REL-7   |
| Deferred measurement          | MD   |  | Enumerate   | Indicates the UE has not     | REL-7   |
| control reading               |      |  | d (TRUE)    | read SIB11 and SIB12.        |         |
|                               |      |  | , ,         | Default value is FALSE       |         |
| RB Information elements       |      |  |             |                              |         |
| COUNT-C activation time       | OP   |  | Activation  | Used for radio bearers       |         |
|                               |      |  | time        | mapped on RLC-TM. Only       |         |
|                               |      |  | 10.3.3.1    | applicable if the UE is      |         |
|                               |      |  |             | moving to CELL_DCH state     |         |
|                               |      |  |             | due to this procedure        |         |
| Uplink counter                | OP   |  |             | ·                            |         |
| synchronisation info          |      |  |             |                              |         |
| >RB with PDCP information     | OP   | 1 to   |             | This IE is needed for each   |         |
| list                          |      | <maxrb< td=""><td></td><td>RB having PDCP in the case</td><td></td></maxrb<> |             | RB having PDCP in the case   |         |
|                               |      | allRABs>   |             | of lossless SRNS relocation  |         |
| >>RB with PDCP information    | MP   |  | RB with     |                              |         |
|                               |      |  | PDCP        |                              |         |
|                               |      |  | information |                              |         |
|                               |      |  | 10.3.4.22   |                              |         |
| >START list                   | MP   | 1 to   |             | START [40] values for all CN |         |
|                               |      | <maxcn< td=""><td></td><td>domains.</td><td></td></maxcn<>                   |             | domains.                     |         |
|                               |      | domains  |             |                              |         |
|                               |      | >  |             |                              |         |
| >>CN domain identity          | MP   |  | CN domain   |                              |         |
| -                             |      |  | identity    |                              |         |
|                               |      |  | 10.3.1.1    |                              |         |
| >>START                       | MP   |  | START       | START value to be used in    |         |
|                               |      |  | 10.3.3.38   | this CN domain.              |         |

## 10.2.64 UTRAN MOBILITY INFORMATION FAILURE

This message is sent to indicate a failure to act on a received UTRAN MOBILITY INFORMATION message.

RLC-SAP: AM

Logical channel: DCCH

Direction: UE→UTRAN

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Message Type                   | MP   |       | Message            |                       |
|                                |      |       | Type               |                       |
| UE information elements        |      |       |                    |                       |
| RRC transaction identifier     | MP   |       | RRC                |                       |
|                                |      |       | transaction        |                       |
|                                |      |       | identifier         |                       |
|                                |      |       | 10.3.3.36          |                       |
| Integrity check info           | CH   |       | Integrity          |                       |
|                                |      |       | check info         |                       |
|                                |      |       | 10.3.3.16          |                       |
| Failure cause                  | MP   |       | Failure            |                       |
|                                |      |       | cause and          |                       |
|                                |      |       | error              |                       |
|                                |      |       | information        |                       |
|                                |      |       | 10.3.3.14          |                       |

## 10.3 Information element functional definitions

## 10.3.1 CN Information elements

## 10.3.1.1 CN domain identity

Identifies the type of core network domain.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| CN domain identity             | MP   |       | Enumerated         |                       |
| _                              |      |       | (CS domain,        |                       |
|                                |      |       | PS domain)         |                       |

### 10.3.1.2 CN Domain System Information

| Information Element/Group name              | Need | Multi | Type and reference                                 | Semantics description |
|---|------|-------|--|-----------------------|
| CN domain identity                          | MP   |       | CN domain identity 10.3.1.1                        |                       |
| CHOICE CN Type<br>>GSM-MAP                  | MP   |       |  |                       |
| >>CN domain specific NAS system information | MP   |       | NAS system<br>information<br>(GSM-MAP)<br>10.3.1.9 |                       |
| >ANSI-41                                    |      |       |  |                       |
| >>CN domain specific NAS system information | MP   |       | ANSI-41<br>NAS system<br>information,<br>10.3.9.4  |                       |
| CN domain specific DRX cycle                | MP   |       | CN domain  |                       |

| Information Element/Group | Need | Multi | Type and     | Semantics description |
|---------------------------|------|-------|--------------|-----------------------|
| name                      |      |       | reference    |                       |
| length coefficient        |      |       | specific DRX |                       |
|                           |      |       | cycle length |                       |
|                           |      |       | coefficient, |                       |
|                           |      |       | 10.3.3.6     |                       |

## 10.3.1.3 CN Information info

| Information Element/Group name                 | Need | Multi                                      | Type and reference                                 | Semantics description | Version |
|--|------|--|--|-----------------------|---------|
| PLMN identity                                  | OP   |  | PLMN<br>identity<br>10.3.1.11                      |                       |         |
| CN common GSM-MAP NAS system information       | OP   |  | NAS system information (GSM-MAP) 10.3.1.9          |                       |         |
| CN domain related information                  | OP   | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br> |  |                       |         |
| >CN domain identity                            | MP   |  | CN domain identity 10.3.1.1                        |                       |         |
| >CN domain specific GSM-MAP<br>NAS system info | MP   |  | NAS system<br>information<br>(GSM-MAP)<br>10.3.1.9 |                       |         |
| Primary PLMN identity                          | OP   |  | PLMN<br>identity<br>10.3.1.11                      |                       | REL-6   |

## 10.3.1.3a CN Information info full

| Information Element/Group name                   | Need | Multi                                      | Type and reference  | Semantics description | Version |
|--|------|--|---|-----------------------|---------|
| PLMN identity                                    | OP   |  | PLMN<br>identity<br>10.3.1.11   |                       |         |
| CN common GSM-MAP NAS system information         | OP   |  | NAS system information (GSM-MAP) 10.3.1.9                             |                       |         |
| CN domain related information                    | OP   | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br> |   |                       |         |
| >CN domain identity                              | MP   |  | CN domain identity 10.3.1.1   |                       |         |
| >CN domain specific GSM-MAP<br>NAS system info   | MP   |  | NAS system information (GSM-MAP) 10.3.1.9                             |                       |         |
| >CN domain specific DRX cycle length coefficient | MP   |  | CN domain<br>specific DRX<br>cycle length<br>coefficient,<br>10.3.3.6 |                       |         |
| Primary PLMN identity                            | OP   |  | PLMN<br>identity<br>10.3.1.11   |                       | REL-6   |

## 10.3.1.3b Domain Specific Access Restriction

| Information Element/Group name             | Need | Multi           | Type and reference                    | Semantics description   | Version |
|--|------|-----------------|---------------------------------------|---|---------|
| CHOICE restriction status                  | MP   |                 |                                       |   | REL-6   |
| >no restriction                            |      |                 |                                       | (no data) This means 'no Access Class is barred'  | REL-6   |
| >restriction                               |      |                 |                                       |   | REL-6   |
| >>Domain Specific Access Class Barred List | MD   | <maxac></maxac> |                                       | The first instance of the parameter corresponds to Access Class 0, the second to Access Class 1 and so on up to Access Class 15. UE reads this IE of its access class stored in SIM. The default value is the IE "Access Class Barred list" contained in the IE "Cell Access Restriction" of the System Information Block Type 3. | REL-6   |
| >>>Access Class Barred                     | MP   |                 | Enumerated(<br>barred, not<br>barred) |   | REL-6   |

## 10.3.1.3c Domain Specific Access Restriction Parameters

This IE specifies domain specific access class restriction parameters for CS and PS domain.

| Information Element/Group name           | Need | Multi | Type and reference                                       | Semantics description  | Version |
|--|------|-------|--|--|---------|
| CS Domain Specific Access<br>Restriction | MP   |       | Domain<br>Specific<br>Access<br>Restriction<br>10.3.1.3b | This IE contains Domain<br>Specific Access<br>Restriction Parameters<br>for CS domain. | REL-6   |
| PS Domain Specific Access<br>Restriction | MP   |       | Domain<br>Specific<br>Access<br>Restriction<br>10.3.1.3b | This IE contains Domain<br>Specific Access<br>Restriction Parameters<br>for PS domain. | REL-6   |

### 10.3.1.4 IMEI

This IE contains an International Mobile Equipment Identity. Setting specified in [11].

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| IMEI                           | MP   | 15    |                    | The first element contains the first IMEI digit, the second element the second IMEI digit and so on. |
| >IMEI digit                    | MP   |       | INTEGER(015)       |  |

### 10.3.1.5 IMSI (GSM-MAP)

This IE contains an International Mobile Subscriber Identity, used towards a GSM-MAP type of PLMN. Setting specified in [11].

| Information Element/Group | Need | Multi   | Type and   | Semantics description   |
|---------------------------|------|---------|------------|---|
| name                      |      |         | reference  |   |
| IMSI                      | MP   | 6 to 21 |            | The first element contains the first IMSI digit, the second element the second IMSI digit and so on.  Although normally upto 15 digits are used for this IE, a bigger length is used to support future extension. |
| >IMSI digit               | MP   |         | INTEGER(0. |   |
|                           |      |         | .9)        |   |

### 10.3.1.6 Intra Domain NAS Node Selector

This IE carries information to be used to route the establishment of a signalling connection to a CN node within a CN domain.

| Information Element/Group name             | Need | Multi | Type and reference | Semantics description  |
|--|------|-------|--------------------|--|
| CHOICE version                             | MP   |       |                    |  |
| >R99                                       |      |       |                    | This choice shall also be used   |
|  |      |       |                    | by mobiles that are compliant  |
|  |      |       |                    | to this version of the protocol  |
| >>CHOICE CN type                           | MP   |       |                    |  |
| >>>GSM-MAP                                 |      |       |                    |  |
| >>>>CHOICE Routing basis                   | MP   |       |                    |  |
| >>>>local (P)TMSI                          |      |       |                    | TMSI allocated in the current LA or PTMSI allocated in the current RA  |
| >>>>Routing parameter                      | MP   |       | Bit string<br>(10) | The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/PTMSI.  |
| >>>>(P)TMSI of same PLMN, different (RA)LA |      |       |                    | TMSI allocated in another LA of this PLMN or PTMSI allocated in another RA this PLMN   |
| >>>>Routing parameter                      | MP   |       | Bit string<br>(10) | The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/ PTMSI. |
| >>>>(P)TMSI of different PLMN              |      |       |                    | TMSI or a PTMSI allocated in another PLMN  |

| Information Element/Group name     | Need | Multi | Type and reference | Semantics description  |
|------------------------------------|------|-------|--------------------|--|
| >>>>>Routing parameter             | MP   |       | Bit string (10)    | The TMSI/ PTMSI consists of 4 octets (32bits). This can be represented by a string of bits numbered from b0 to b31, with bit b0 being the least significant.  The "Routing parameter" bit string consists of bits b14 through b23 of the TMSI/ PTMSI. The first/leftmost/most significant bit of the bit string contains bit b23 of the TMSI/ PTMSI. |
| >>>>IMSI(response to IMSI paging)  |      |       |                    | NAS identity is IMSI   |
| >>>>>Routing parameter             | MP   |       | Bit string<br>(10) | The "Routing parameter" bit string consists of DecimalToBinary [(IMSI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result.   |
| >>>>IMSI(cause UE initiated event) |      |       |                    | NAS identity is IMSI   |
| >>>>Routing parameter              | MP   |       | Bit string<br>(10) | The "Routing parameter" bit string consists of DecimalToBinary [(IMSI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result.   |
| >>>>IMEI                           |      |       |                    | NAS parameter is IMEI  |
| >>>>Routing parameter              | MP   |       | Bit string<br>(10) | The "Routing parameter" bit string consists of DecimalToBinary [(IMEI div 10) mod 1000]. The first/leftmost bit of the bit string contains the most significant bit of the result.   |
| >>>>Spare 1                        |      |       | Bit string (10)    | This choice shall not be used in this version  |
| >>>>Spare 2                        |      |       | Bit string (10)    | This choice shall not be used in this version  |
| >>>ANSI-41                         |      |       | Bit string (14)    | All bits shall be set to 0   |
| >Later                             |      |       | Bit string(15)     | This bit string shall not be sent by mobiles that are compliant to this version of the protocol.   |

### 10.3.1.7 Location Area Identification

Identifies uniquely a location area for a GSM-MAP type of PLMN. Setting specified in [5].

| Information Element/Group | Need | Multi | Type and       | Semantics description             |
|---------------------------|------|-------|----------------|-----------------------------------|
| name                      |      |       | reference      |                                   |
| PLMN identity             | MP   |       | PLMN           |                                   |
|                           |      |       | identity       |                                   |
|                           |      |       | 10.3.1.11      |                                   |
| LAC                       | MP   |       | Bit string(16) | The first/leftmost bit of the bit |
|                           |      |       |                | string contains the most          |
|                           |      |       |                | significant bit of the LAC        |

#### 10.3.1.7a Multiple PLMN List

This information element identifies the multiple Public Land Mobile Networks (for a GSM-MAP type of PLMN) of a cell in a shared network.

| Information Element/Group name   | Need | Multi  | Type and reference  | Semantics description   | Version |
|----------------------------------|------|--------|---|---|---------|
| MIB PLMN Identity                | MP   |        | Boolean   | The PLMN identity IE 10.3.1.11, broadcasted in the MIB, shall be included in the multiple PLMN list if and only if this IE is TRUE. | REL-6   |
| Multiple PLMNs                   | MP   | 1 to 5 |   |   | REL-6   |
| >PLMN identity with Optional MCC |      |        | PLMN<br>identity<br>with<br>Optional<br>MCC<br>10.3.1.11a |   | REL-6   |

#### 10.3.1.8 NAS message

A non-access stratum message to be transferred transparently through UTRAN.

| Information Element/Group name | Need | Multi | Type and reference      | Semantics description   |
|--------------------------------|------|-------|-------------------------|---|
| NAS message                    | MP   |       | Octet string<br>(14095) | The first octet contains octet 1 [17] of the NAS message, the second octet contains octet 2 of the NAS message and so on. |

#### 10.3.1.9 NAS system information (GSM-MAP)

This information element contains system information that belongs to the non-access stratum for a GSM-MAP type of PLMN. This information is transparent to RRC. It may contain either information specific to one CN domain (CS or PS) or information common for both CN domains.

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description  |
|--------------------------------|------|-------|---------------------|--|
| GSM-MAP NAS system information | MP   |       | Octet<br>string(18) | The first octet contains octet 1 [5] of the NAS system information element, the second octet contains octet 2 of the NAS system information element and so on. |

#### 10.3.1.10 Paging record type identifier

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description |
|--------------------------------|------|-------|--|-----------------------|
| Paging record type identifier  | MP   |       | Enumerated<br>(IMSI (GSM-<br>MAP), TMSI<br>(GSM-MAP)/<br>P-TMSI,<br>IMSI (DS-<br>41), TMSI<br>(DS-41)) |                       |

#### 10.3.1.11 PLMN identity

This information element identifies a Public Land Mobile Network for a GSM-MAP type of PLMN. Setting of digits is defined in [11].

| Information Element/Group name | Need | Multi  | Type and reference | Semantics description  |
|--------------------------------|------|--------|--------------------|--|
| MCC                            | MP   | 3      |                    | The first element contains the first MCC digit, the second element the second MCC digit and so on. |
| >MCC digit                     | MP   |        | INTEGER(0.<br>.9)  |  |
| MNC                            | MP   | 2 to 3 |                    | The first element contains the first MNC digit, the second element the second MNC digit and so on. |
| >MNC digit                     | MP   |        | INTEGER(09)        |  |

#### 10.3.1.11a PLMN identity with Optional MCC

This information element is a PLMN identity in subclause 10.3.1.11 where MCC is optional. It is used in a shared network and inserted in the Multiple PLMN List in subclause 10.3.1.7a.

| Information Element/<br>Group name | Need | Multi  | Type and reference | Semantics description  | Version |
|------------------------------------|------|--------|--------------------|--|---------|
| MCC                                | MD   | 3      |                    | The first element contains the first MCC digit, the second element the second MCC digit and so on. | REL-6   |
| >MCC digit                         | MP   |        | Integer<br>(09)    |  | REL-6   |
| MNC                                | MP   | 2 to 3 |                    | The first element contains the first MNC digit, the second element the second MNC digit and so on. | REL-6   |
| >MNC digit                         | MP   |        | Integer<br>(09)    | -  | REL-6   |

#### 10.3.1.12 PLMN Type

Identifies the type of Public Land Mobile Network (PLMN). This IE shall be used to control the interpretation of network dependent messages and information elements in the RRC protocol.

| Information Element/Group | Need | Multi | Type and   | Semantics description      |
|---------------------------|------|-------|------------|----------------------------|
| name                      |      |       | reference  |                            |
| PLMN Type                 | MP   |       | Enumerated | One spare value is needed. |
|                           |      |       | (GSM-MAP,  | ·                          |
|                           |      |       | ANSI-41,   |                            |
|                           |      |       | GSM-MAP    |                            |
|                           |      |       | and ANSI-  |                            |
|                           |      |       | 41)        |                            |

#### 10.3.1.13 P-TMSI (GSM-MAP)

This IE contains a Packet Temporary Mobile Subscriber Identity, used towards a GSM-MAP type of PLMN.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| P-TMSI                         | MP   |       | Bit string (32)    | Setting specified in [11]. The first/leftmost bit of the bit string contains the most significant bit of the P-TMSI. |

### 10.3.1.14 RAB identity

This information element uniquely identifies a radio access bearer within a CN domain.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   |
|--------------------------------|------|-------|--------------------|---|
| CHOICE RAB identity type       | MP   |       | 1010101100         |   |
| >RAB identity (GSM-MAP)        |      |       | Bit string (8)     | Formatted according to [5]. The first/leftmost bit of the bit string contains the most significant bit of the RAB identity. In case of a radio bearer setup for an MBMS selected service, the RAB identity is set to the value reserved for 'MBMS Broadcast mode', see [5]. |
| >RAB identity (ANSI-41)        |      |       | Bit string (8)     | The first/leftmost bit of the bit string contains the most significant bit of the RAB identity.   |

| CHOICE NAS binding info type | Condition under which the given RAB identity type is chosen |  |  |
|------------------------------|---|--|--|
| RAB identity (GSM-MAP)       | PLMN is of type GSM-MAP                                     |  |  |
| RAB identity (ANSI-41)       | PLMN is of type ANSI-41                                     |  |  |

### 10.3.1.15 Routing Area Code

Identifies a routing area within a location area for a GSM-MAP type of PLMN.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   |
|--------------------------------|------|-------|--------------------|---|
| Routing Area Code              | MP   |       | Bit string(8)      | Setting specified in [11]. The first/leftmost bit of the bit string contains the most significant bit of the Routing Area Code. |

### 10.3.1.16 Routing Area Identification

Identifies uniquely a routing area for a GSM-MAP type of PLMN. Setting specified in [11].

| Information Element/Group | Need | Multi | Type and       | Semantics description |
|---------------------------|------|-------|----------------|-----------------------|
| name                      |      |       | reference      |                       |
| LAI                       | MP   |       | Location       |                       |
|                           |      |       | area           |                       |
|                           |      |       | identification |                       |
|                           |      |       | 10.3.1.7       |                       |
| RAC                       | MP   |       | Routing area   |                       |
|                           |      |       | code           |                       |
|                           |      |       | 10.3.1.15      |                       |

### 10.3.1.17 TMSI (GSM-MAP)

This IE contains a Temporary Mobile Subscriber Identity, used towards a GSM-MAP type of PLMN.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| TMSI (GSM-MAP)                 | MP   |       | Bit string (32)    | Setting specified in [11]. The first/leftmost bit of the bit string contains the most significant bit of the TMSI. |

### 10.3.2 UTRAN mobility Information elements

#### 10.3.2.1 Cell Access Restriction

Indicates the restrictions to cell access.

| Information Element/Group name              | Need           | Multi | Type and reference                                | Semantics description  |
|---|----------------|-------|---|--|
| Cell Barred                                 | MP             |       | Enumerated(<br>not barred,<br>barred)             | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 and the value in this IE is different from "barred" the UE behaviour is unspecified.  |
| Intra-frequency cell re-selection indicator | CV-Barred      |       | Enumerated(<br>not allowed,<br>allowed)           |  |
| T <sub>barred</sub>                         | CV-Barred      |       | Integer<br>(10,20,40,80<br>,160,320,640<br>,1280) | [4]<br>[s]   |
| Cell Reserved for operator use              | MP             |       | Enumerated(<br>reserved, not<br>reserved)         |  |
| Cell Reservation Extension                  | MP             |       | Enumerated(<br>reserved, not<br>reserved)         |  |
| Access Class Barred list                    | CV-SIB3-<br>MD | maxAC |   | Default is no access class barred is applied. The first instance of the parameter corresponds to Access Class 0, the second to Access Class 1 and so on up to Access Class 15. UE reads this IE of its access class stored in SIM. |
| >Access Class Barred                        | MP             |       | Enumerated<br>(barred, not<br>barred)             |  |

| Condition | Explanation   |  |  |
|-----------|---|--|--|
| Barred    | The IE is mandatory present if the IE "Cell Barred" has the value "Barred"; otherwise the element is not                              |  |  |
|           | needed in the message.  |  |  |
| SIB3-MD   | The IE is mandatory and has a default value if the IE "Cell Access Restriction" is included in SIB 3. Otherwise the IE is not needed. |  |  |

#### 10.3.2.2 Cell identity

This information element identifies a cell unambiguously within a PLMN.

NOTE: This information element may carry any implementation dependent identity that unambiguously identifies a cell within a PLMN. For GAN to UTRAN HO the Cell id is encoded as required in [9].

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Cell identity                  | MP   |       | bit string(28)     |                       |

### 10.3.2.3 Cell selection and re-selection info for SIB3/4

| Information<br>Element/Group name              | Need | Multi                               | Type and reference                                   | Semantics description  | Version |
|--|------|-------------------------------------|--|--|---------|
| Mapping Info                                   | OP   |                                     | Mapping info 10.3.2.5                                | This IE should not be sent.  |         |
| Cell selection and reselection quality measure | MP   |                                     | Enumerat<br>ed<br>(CPICH<br>Ec/N0,<br>CPICH<br>RSCP) | Choice of measurement (CPICH Ec/N0 or CPICH RSCP) to use as quality measure Q for FDD cells. This IE is also sent to the UE in SIB11/12. Both occurrences of the IE should be set to the same value. |         |
| CHOICE mode                                    | MP   |                                     |  |  |         |
| >FDD  >>S <sub>intrasearch</sub>               | OP   |                                     | Integer (-<br>3220 by<br>step of 2)                  | If a negative value is received the UE shall consider the value to be 0. [4] [dB]  |         |
| >>S <sub>intersearch</sub>                     | OP   |                                     | Integer (-<br>3220 by<br>step of 2)                  | If a negative value is received the UE shall consider the value to be 0. [4] [dB]  |         |
| >>S <sub>searchHCS</sub>                       | OP   |                                     | Integer (-<br>10591<br>by step of<br>2)              | If a negative value is received the UE shall consider the value to be 0. [4] [dB]  |         |
| >>RAT List                                     | OP   | 1 to<br><maxot<br>herRAT</maxot<br> |  |  |         |
| >>>RAT identifier                              | MP   |                                     | Enumerat<br>ed (GSM,<br>cdma200<br>0)                |  |         |
| >>>Ssearch,RAT                                 | MP   |                                     | Integer (-<br>3220 by<br>step of 2)                  | In case the value 20 is received the UE shall consider this IE as if it was absent according to [4] If a negative value is received the UE shall consider the value to be 0. [dB]                    |         |
| >>>S <sub>HCS,RAT</sub>                        | OP   |                                     | Integer (-<br>10591<br>by step of<br>2)              | If a negative value is received the UE shall consider the value to be 0.   |         |

| Information<br>Element/Group name | Need         | Multi                               | Type and reference                      | Semantics description   | Version |
|-----------------------------------|--------------|-------------------------------------|---|---|---------|
|                                   |              |                                     |   | [4]<br>[dB]   |         |
| >>>Slimit,SearchRAT               | MP           |                                     | Integer (-<br>3220 by<br>step of 2)     | If a negative value is received the UE shall consider the value to be 0. [4] [dB]   |         |
| >>Qqualmin                        | CV-SIB3      |                                     | Integer (-<br>240)                      | Ec/N0, [dB]   |         |
| >>Qrxlevmin                       | CV-SIB3      |                                     | Integer (-<br>11525<br>by step of<br>2) | RSCP, [dBm]   |         |
| >> Delta <sub>Qrxlevmin</sub>     | CV-<br>Delta |                                     | Integer(-<br>42 by<br>step of 2)        | If present, the actual value of Qrxlevmin = Qrxlevmin + Delta <sub>Qrxlevmin</sub>  | REL-5   |
| >>Qqualmin-offset                 | MD           |                                     | Integer<br>(116)                        | Ec/N0, [dB]<br>The default value is 0   | REL-7   |
| >>Qrxlevmin-offset                | MD           |                                     | Integer<br>(216 by<br>step of 2)        | RSCP, [dB]<br>The default value is 0  | REL-7   |
| >>S <sub>intrasearch</sub>        | OP           |                                     | Integer (-<br>10591<br>by step of<br>2) | If a negative value is received the UE shall consider the value to be 0. [4] [dB]   |         |
| >>Sintersearch                    | OP           |                                     | Integer (-<br>10591<br>by step of<br>2) | If a negative value is received the UE shall consider the value to be 0. [4] [dB]   |         |
| >>SsearchHCS                      | OP           |                                     | Integer (-<br>10591<br>by step of<br>2) | If a negative value is received the UE shall consider the value to be 0. [4] [dB]   |         |
| >>RAT List                        | OP           | 1 to<br><maxot<br>herRAT</maxot<br> |   | [45]  |         |
| >>>RAT identifier                 | MP           |                                     | Enumerat<br>ed (GSM,<br>cdma200<br>0)   |   |         |
| >>>S <sub>search,RAT</sub>        | MP           |                                     | Integer (-<br>10591<br>by step of<br>2) | In case the value 91 is received the UE shall consider this IE as if it was absent according to [4] If a negative value is received the UE shall consider the value to be 0. [dB] |         |
| >>>S <sub>HCS,RAT</sub>           | OP           |                                     | Integer (-<br>10591<br>by step of<br>2) | If a negative value is received the UE shall consider the value to be 0. [4] [dB]   |         |

| Information<br>Element/Group name | Need  | Multi | Type and reference                      | Semantics description  | Version |
|-----------------------------------|---|-------|---|--|---------|
| >>>S <sub>limit,SearchRAT</sub>   | MP  |       | Integer (-<br>10591<br>by step of<br>2) | If a negative value is received the UE shall consider the value to be 0. [4] [dB]  |         |
| >>Qrxlevmin                       | MP  |       | Integer (-<br>11525<br>by step of<br>2) | RSCP, [dBm]  |         |
| >>Delta <sub>Qrxlevmin</sub>      | CV-<br>Delta                                |       | Integer(-<br>42 by<br>step of 2)        | If present, the actual value of Qrxlevmin = Qrxlevmin + Delta <sub>Qrxlevmin</sub>   | REL-5   |
| >>Qrxlevmin-offset                | CV-SIB3                                     |       | Integer<br>(216 by<br>step of 2)        | RSCP, [dB]<br>The default value is 0   | REL-7   |
| Qhyst1 <sub>s</sub>               | MP  |       | Integer<br>(040 by<br>step of 2)        | [4]<br>[dB]  |         |
| Qhyst1 <sub>s,PCH</sub>           | CV-SIB4                                     |       | Integer<br>(040)                        | If present, it is used as Qhyst1 <sub>s</sub> for UE in CELL_PCH or URA_PCH state [4] [dB]   | REL-5   |
| Qhyst1 <sub>s,FACH</sub>          | CV-SIB4                                     |       | Integer<br>(040)                        | If present, it is used as Qhyst1s for UE in CELL_FACH state [4] [dB]   | REL-5   |
| Qhyst2 <sub>s</sub>               | CV-<br>FDD-<br>Quality-<br>Measure          |       | Integer<br>(040 by<br>step of 2)        | Default value is Qhyst1 <sub>s</sub> [4] [dB]  |         |
| Qhyst2 <sub>s,PCH</sub>           | CV-<br>SIB4-<br>FDD-<br>Quality-<br>Measure |       | Integer<br>(040)                        | If present, it is used as Qhyst2 <sub>s</sub> for UE using CPICH Ec/No quality measure in CELL_PCH or URA_PCH state. Default value is Qhyst1 <sub>s,PCH</sub> [4] [dB] | REL-5   |
| Qhyst2 <sub>s,FACH</sub>          | CV-<br>SIB4-<br>FDD-<br>Quality-<br>Measure |       | Integer<br>(040)                        | If present, it is used as Qhyst2 <sub>s</sub> for UE using CPICH Ec/No quality measure in CELL_FACH state. Default value is Qhyst1 <sub>s,FACH</sub> [4] [dB]          | REL-5   |
| Treselections                     | MP  |       | Integer<br>(031)                        | [s]  |         |
| Treselection <sub>s,PCH</sub>     | CV-SIB4                                     |       | Integer<br>(031)                        | If present, it is used as Treselections for UE in CELL_PCH or URA_PCH state [4] [s]  | REL-5   |
| Treselection <sub>s,FACH</sub>    | CV-SIB4                                     |       | Real<br>(06.2 by<br>step of             | If present, it is used as<br>Treselection <sub>s</sub> for UE in<br>CELL_FACH state [4]  | REL-5   |

| Information<br>Element/Group name                    | Need                              | Multi | Type and reference  | Semantics description  | Version |
|--|-----------------------------------|-------|---|--|---------|
|  |                                   |       | 0.2)  | [s]  |         |
| Speed dependent<br>ScalingFactor for<br>Treselection | OP                                |       | Real (01<br>by step of<br>0.1)                                    | This IE is used by the UE in high mobility state as scaling factor for Treselection <sub>s</sub> or Treselection <sub>s,PCH</sub> or Treselection <sub>s,FACH</sub> [4]. | REL-5   |
| Inter-frequency<br>ScalingFactor for<br>Treselection | OP                                |       | Real<br>(14.75<br>by step of<br>0.25)                             | If present, it is used by the UE as scaling factor for Treselections or Treselections, PCH or Treselections, FACH for inter-frequency cell reselection evaluation [4].   | REL-5   |
| Inter-RAT ScalingFactor for Treselection             | OP                                |       | Real<br>(14.75<br>by step of<br>0.25)                             | If present, it is used by the UE as scaling factor for Treselections or Treselections, PCH or Treselections, FACH for inter-RAT cell reselection evaluation [4].         | REL-5   |
| Non-HCS_T <sub>CRmax</sub>                           | MD                                |       | Enumerat<br>ed (not<br>used, 30,<br>60, 120,<br>180, 240)         | [s] Default value is 'not used'.   | REL-5   |
| Non-HCS_N <sub>CR</sub>                              | CV-UE<br>speed<br>detector<br>_MD |       | Integer<br>(116)  | Default value = 8  | REL-5   |
| Non-HCS_T <sub>CRmaxHyst</sub>                       | CV-UE<br>speed<br>detector<br>_MP |       | Enumerat<br>ed (not<br>used, 10,<br>20, 30,<br>40, 50,<br>60, 70) | [s]  | REL-5   |
| HCS Serving cell<br>Information                      | OP                                |       | HCS<br>Serving<br>cell<br>informatio<br>n<br>10.3.7.12            |  |         |
| Maximum allowed UL TX power                          | MP                                |       | Maximum<br>allowed<br>UL TX<br>power<br>10.3.6.39                 | [dBm]<br>UE_TXPWR_MAX_RA<br>CH in [4].   |         |

| Condition                      | Explanation  |
|--------------------------------|--|
| FDD-Quality-Measure            | The IE is not needed if the IE "Cell selection and reselection quality measure" has the value CPICH RSCP, otherwise the IE is mandatory and has a default value.   |
| Delta                          | This IE is optional if the value of Qrxlevmin is below – 115dBm. It is not needed otherwise.   |
| SIB3                           | This IE is mandatory default if the IE "Cell selection and re-selection info for SIB3/4" is included in SIB type 3. It is not needed otherwise.  |
| SIB4                           | This IE is optional if the IE "Cell selection and reselection info for SIB3/4" is included in SIB type 4. It is not needed otherwise.  |
| SIB4-FDD-Quality-Measure       | This IE is optional if the IE "Cell selection and reselection info for SIB3/4" is included in SIB type 4, and the IE "Cell selection and reselection quality measure" has the value CPICH Ec/N0. It is not needed otherwise. |
| UE Speed detector_MD (non-HCS) | This IE is not needed if non-HCS_T <sub>CRmax</sub> equals 'not used', else it is mandatory default.   |
| UE Speed detector_MP (non-HCS) | This IE is not needed if non-HCS_T <sub>CRmax</sub> equals 'not used', else it is mandatory present.   |

### 10.3.2.4 Cell selection and re-selection info for SIB11/12

| Information Element/Group name    | Need                               | Multi | Type and reference   | Semantics description   | Version |
|-----------------------------------|------------------------------------|-------|--|---|---------|
| Qoffset1 <sub>s,n</sub>           | MD                                 |       | Integer(-<br>5050)   | Default value is 0.<br>[dB]   |         |
| Qoffset2 <sub>s,n</sub>           | CV-<br>FDD-<br>Quality-<br>Measure |       | Integer(-<br>5050)   | Default value is 0.<br>[dB]   |         |
| Maximum allowed UL TX power       | MD                                 |       | Maximum<br>allowed<br>UL TX<br>power<br>10.3.6.39            | According to UE_TXPWR_MAX_RA CH in [4], [dBm]. If applied to FDD or TDD cells, the default is the Maximum allowed UL TX power for the serving cell. If applied to a GSM cell, the default is the UE maximum output power applicable for this GSM cell, according to the UE's radio access capability. |         |
| HCS neighbouring cell information | OP                                 |       | HCS<br>Neighbou<br>ring cell<br>informatio<br>n<br>10.3.7.11 |   |         |
| CHOICE mode                       | MP                                 |       |  |   |         |
| >FDD<br>>>Qqualmin                | CV-<br>FDD-<br>Serving-<br>Cell    |       | Integer (-<br>240)   | Ec/N0, [dB] Default value is Qqualmin for the serving cell  |         |
| >>Qrxlevmin                       | MD                                 |       | Integer (-   | RSCP, [dBm]   |         |

| Information Element/Group name | Need         | Multi | Type and reference                      | Semantics description  | Version |
|--------------------------------|--------------|-------|---|--|---------|
|                                |              |       | 11525<br>by step of<br>2)               | Default value is<br>Qrxlevmin for the<br>serving cell                              |         |
| >>Delta <sub>Qrxlevmin</sub>   | CV-<br>Delta |       | Integer(-<br>42 by<br>step of 2)        | If present, the actual value of Qrxlevmin = Qrxlevmin + Delta <sub>Qrxlevmin</sub> | REL-5   |
| >TDD                           |              |       |   |  |         |
| >>Qrxlevmin                    | MD           |       | Integer (-<br>11525<br>by step of<br>2) | RSCP, [dBm] Default value is Qrxlevmin for the serving cell                        |         |
| >> Delta <sub>Qrxlevmin</sub>  | CV-<br>Delta |       | Integer(-<br>42 by<br>step of 2)        | If present, the actual value of Qrxlevmin = Qrxlevmin + Delta <sub>Qrxlevmin</sub> | REL-5   |
| >GSM                           |              |       |   |  |         |
| >>Qrxlevmin                    | MD           |       | Integer (-<br>11525<br>by step of<br>2) | GSM RSSI, [dBm] Default value is Qrxlevmin for the serving cell                    |         |

| Condition           | Explanation   |
|---------------------|---|
| FDD-Quality-Measure | This IE is mandatory and has a default value for          |
|                     | Intra/Inter Frequency Cells if the IE "Cell selection and |
|                     | reselection quality measure" has the value CPICH          |
|                     | Ec/No. Otherwise the IE is absent.                        |
| FDD-Serving-Cell    | This IE is mandatory and has a default value if the       |
|                     | serving cell is an FDD cell. Otherwise the IE is          |
|                     | mandatory present.  |
| Delta               | This IE is optional if Qrxlevmin is present and the       |
|                     | value of Qrxlevmin is below -115dBm. It is not            |
|                     | needed otherwise.   |

# 10.3.2.5 Mapping Info

| Information Element/Group name      | Need | Multi  | Type and<br>Reference   | Semantics description   | Version   |
|-------------------------------------|------|--|---|---|---|
| Mapping List                        | MP   | 1 to<br><maxrat></maxrat>                      |   |   |   |
| >RAT                                | MP   |  | Enumerated<br>(UTRA FDD,<br>UTRA TDD<br>3.84 Mcps,<br>UTRA TDD<br>1.28 Mcps,<br>GSM,<br>cdma2000) |   | UTRA<br>TDD 1.28<br>Mcps is<br>included<br>for REL-<br>4. |
| >Mapping Function Parameter<br>List | MP   | 1 to<br><maxmeas<br>Intervals&gt;</maxmeas<br> |   |   |   |
| >>Function type                     | MP   |  | Enumerated (linear, function type 2, function type 3, function type 4)                            | Type of the function within the interval.                     |   |
| >>Map_parameter_1                   | MD   |  | Integer<br>(099)  | Parameter describing the mapping function between the quality |   |

| Information Element/Group name | Need      | Multi | Type and<br>Reference     | Semantics description   | Version   |
|--------------------------------|-----------|-------|---------------------------|---|---|
|                                |           |       |                           | measurement and the representing quality value, see [4]. Default value is zero for the first interval or otherwise the value of Map_parameter_2 of the interval before.   |   |
|                                |           |       | Integer<br>(0127)         | For 1.28 Mcps TDD, the parameter is used to indicate the uplink access location of the serving cell.  | REL-7   |
| >>Map_parameter_2              | MP        |       | Integer<br>(099)          | Parameter describing the mapping function between the quality measurement and the representing quality value, see [4].  |   |
| >>Upper_limit                  | CV-MaxInt |       | Integer<br>(1MaxMeas<br>) | Upper limit of interval for which the Map_parameter_1 and Map_parameter_2 are valid. MaxMeas = 25 if RAT = UTRA FDD / CPICH Ec/N0, MaxMeas = 91 if RAT = UTRA TDD 3.84 Mcps or if RAT = UTRA TDD 1.28 Mcps or if RAT = UTRA FDD/ CPICH RSCP, MaxMeas = 63 if RAT = GSM. | UTRA<br>TDD 1.28<br>Mcps is<br>included<br>for REL-<br>4. |

| Condition | Explanation                                      |  |  |
|-----------|--|--|--|
| MaxInt    | This IE is mandatory present if Mapping Function |  |  |
|           | Parameter List has not reached maxMeasIntervals  |  |  |
|           | and is not needed otherwise.                     |  |  |

### 10.3.2.6 URA identity

Gives the identity of the UTRAN Registration Area. It can be used to indicate to the UE which URA it shall use in case of overlapping URAs.

| Information Element/Group | Need | Multi | Type and       | Semantics description |
|---------------------------|------|-------|----------------|-----------------------|
| name                      |      |       | reference      |                       |
| URA identity              | MP   |       | bit string(16) |                       |

#### 10.3.3 UE Information elements

#### 10.3.3.1 Activation time

Activation Time defines the frame number/time at which the operation/changes caused by the related message shall take effect. Values between 0 and 255 indicate the absolute value of CFN (Connection Frame Number) of that frame number/time.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Activation time                | MP   |       | Integer(0<br>255)  | CFN [10]              |

#### 10.3.3.2 Capability Update Requirement

This IE indicates to the UE which specific capabilities to transfer to the network.

| Information Element/Group      | Need | Multi   | Type and    | Semantics                        | Version  |
|--------------------------------|------|---|-------------|----------------------------------|----------|
| name                           |      |   | reference   | description                      |          |
| UE radio access FDD capability | MP   |   | Boolean     | TRUE indicates                   |          |
| update requirement             |      |   |             | update required                  |          |
| UE radio access 3.84 Mcps TDD  | MP   |   | Boolean     | TRUE indicates                   | Name     |
| capability update requirement  |      |   |             | update required                  | changed  |
|                                |      |   |             |                                  | in REL-4 |
| UE radio access 7.68 Mcps TDD  | MP   |   | Boolean     | TRUE indicates                   | REL-7    |
| capability update requirement  |      |   |             | update required                  |          |
| UE radio access 1.28 Mcps TDD  | MP   |   | Boolean     | TRUE indicates                   | REL-4    |
| capability update requirement  |      |   |             | update required                  |          |
| System specific capability     | OP   | 1 to  |             | In this version, a               |          |
| update requirement list        |      | <maxsyste< td=""><td></td><td>maximum size of</td><td></td></maxsyste<> |             | maximum size of                  |          |
|                                |      | mCapabilit  |             | 4 of the list shall              |          |
|                                |      | y>  |             | be applied and                   |          |
|                                |      |   |             | any items after the              |          |
|                                |      |   |             | 4 <sup>th</sup> item in the list |          |
|                                |      |   |             | shall be ignored.                |          |
| >System specific capability    | MP   |   | Enumerated  |                                  |          |
| update requirement             |      |   | (GSM        |                                  |          |
|                                |      |   | , GERAN lu) |                                  | REL-5    |

#### Default value is:

"UE radio capability FDD update requirement" = false

"UE radio capability 3.84 Mcps TDD update requirement" = false

"UE radio capability 7.68 Mcps TDD update requirement" = false

"UE radio capability 1.28 Mcps TDD update requirement" = false

"System specific capability update requirement" not present.

#### 10.3.3.3 Cell update cause

Indicates the cause for cell update.

| Information Element/Group | Need | Multi | Type and  | Semantics                  | Version |
|---------------------------|------|-------|---|----------------------------|---------|
| name                      |      |       | reference   | description                |         |
| Cell update cause         | MP   |       | Enumerated (cell reselection, periodical cell update, uplink data transmission, paging response, re- entered service area, radio link failure, RLC unrecoverable error. | One spare value is needed. |         |
|                           |      |       | MBMS reception, MBMS ptp RB request)  |                            | REL-6   |

### 10.3.3.4 Ciphering Algorithm

| Information Element/Group name | Need | Multi | Type and reference           | Semantics description | Version |
|--------------------------------|------|-------|------------------------------|-----------------------|---------|
| Ciphering algorithm            | MP   |       | Enumerated<br>(UEA0,<br>UEA1 |                       |         |
|                                |      |       | . UEA2)                      |                       | REL-7   |

### 10.3.3.5 Ciphering mode info

This information element contains the ciphering specific security mode control information.

| Information Element/Group name                       | Need | Multi | Type and reference                          | Semantics description   |
|--|------|-------|---|---|
| Ciphering mode command                               | MP   |       | Enumerated (start/restart)                  |   |
| Ciphering algorithm                                  | MP   |       | Ciphering algorithm 10.3.3.4                |   |
| Ciphering activation time for DPCH                   | OP   |       | Activation time 10.3.3.1                    | Used for radio bearers<br>mapped on RLC-TM. Only<br>applicable if the UE is already<br>in CELL_DCH state                                |
| Radio bearer downlink ciphering activation time info | OP   |       | RB<br>activation<br>time info,<br>10.3.4.13 | Used for radio bearers mapped on RLC-AM or RLC- UM The UTRAN should not include this IE in a message other than a SECURITY MODE COMMAND |

### 10.3.3.6 CN domain specific DRX cycle length coefficient

A coefficient in the formula to count the paging occasions to be used by a specific UE (specified in [4]) .

| Information Element/Group name                  | Need | Multi | Type and reference | Semantics description   |
|---|------|-------|--------------------|---|
| CN domain specific DRX cycle length coefficient | MP   |       | Integer(69)        | Refers to 'k' in the formula as<br>specified in [4], Discontinuous<br>reception |

10.3.3.7 Void

#### 10.3.3.8 C-RNTI

The cell RNTI (C-RNTI) identifies a UE having a RRC connection within a cell.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| C-RNTI                         | MP   |       | bit string(16)     |                       |

10.3.3.9 Void

#### 10.3.3.9a DSCH-RNTI

In TDD, the DSCH-RNTI identifies a UE in CELL\_DCH or CELL\_FACH using a DSCH or USCH within the cell.

|   | Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|---|--------------------------------|------|-------|--------------------|-----------------------|
| [ | DSCH-RNTI                      | MP   |       | bit string(16)     |                       |

#### 10.3.3.10 Void

#### 10.3.3.10a E-RNTI

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| E-RNTI                         | MP   |       | bit string(16)     |                       | REL-6   |

#### 10.3.3.11 Establishment cause

Cause for an RRC connection establishment request.

| Information Element/Group name | Need     | Multi | Type and reference | Semantics description   |
|--------------------------------|----------|-------|--------------------|-------------------------|
| Establishment cause            | MP       |       | Enumerated(        | Eleven spare values are |
| Lotabilorimont dadeo           | 1411     |       | Originating        | needed.                 |
|                                |          |       | Conversatio        | noodod.                 |
|                                |          |       | nal Call,          |                         |
|                                |          |       | Originating        |                         |
|                                |          |       |                    |                         |
|                                |          |       | Streaming          |                         |
|                                |          |       | Call,              |                         |
|                                |          |       | Originating        |                         |
|                                |          |       | Interactive        |                         |
|                                |          |       | Call,              |                         |
|                                |          |       | Originating        |                         |
|                                |          |       | Background         |                         |
|                                |          |       | Call,              |                         |
|                                |          |       | Originating        |                         |
|                                |          |       | Subscribed         |                         |
|                                |          |       | traffic Call,      |                         |
|                                |          |       | Terminating        |                         |
|                                |          |       | Conversatio        |                         |
|                                |          |       |                    |                         |
|                                |          |       | nal Call,          |                         |
|                                |          |       | Terminating        |                         |
|                                |          |       | Streaming          |                         |
|                                |          |       | Call,              |                         |
|                                |          |       | Terminating        |                         |
|                                |          |       | Interactive        |                         |
|                                |          |       | Call,              |                         |
|                                |          |       | Terminating        |                         |
|                                |          |       | Background         |                         |
|                                |          |       | Call,              |                         |
|                                |          |       | Emergency          |                         |
|                                |          |       | Call,              |                         |
|                                |          |       | Inter-RAT          |                         |
|                                |          |       | cell re-           |                         |
|                                |          |       | selection,         |                         |
|                                |          |       | Inter-RAT          |                         |
|                                |          |       | cell change        |                         |
|                                |          |       |                    |                         |
|                                |          |       | order,             |                         |
|                                |          |       | Registration,      |                         |
|                                |          |       | Detach,            |                         |
|                                |          |       | Originating        |                         |
|                                |          |       | High Priority      |                         |
|                                |          |       | Signalling,        |                         |
|                                |          |       | Originating        |                         |
|                                |          |       | Low Priority       |                         |
|                                |          |       | Signalling,        |                         |
|                                |          |       | Call re-           |                         |
|                                |          |       | establishme        |                         |
|                                |          |       | nt,                |                         |
|                                |          |       | Terminating        |                         |
|                                |          |       | High Priority      |                         |
|                                |          |       | Signalling,        |                         |
|                                |          |       | Terminating        |                         |
|                                |          |       | Low Priority       |                         |
|                                |          |       | Cianallina         |                         |
|                                |          |       | Signalling,        |                         |
|                                |          |       | Terminating        |                         |
|                                |          |       | - cause            |                         |
|                                |          |       | unknown,           |                         |
|                                |          |       | MBMS               |                         |
|                                |          |       | reception,         |                         |
|                                |          |       | MBMS ptp           |                         |
|                                | <u> </u> |       | RB request)        |                         |

### 10.3.3.12 Expiration Time Factor

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Expiration Time Factor         | MP   |       | Enumerated(        |                       |
|                                |      |       | 2times,            |                       |
|                                |      |       | 4times,            |                       |
|                                |      |       | 8times,            |                       |
|                                |      |       | 16times,           |                       |
|                                |      |       | 32times,           |                       |
|                                |      |       | 64times,           |                       |
|                                |      |       | 128times,          |                       |
|                                |      |       | 256times)          |                       |

#### 10.3.3.13 Failure cause

Cause for failure to perform the requested procedure.

| Information Element/Group | Need | Multi | Type and   | Semantics description         |
|---------------------------|------|-------|--|-------------------------------|
| name                      |      |       | reference  |                               |
| Failure cause             | MP   |       | Enumerated (configuration unsupported, physical channel failure, incompatible simultaneou s reconfigurati on, protocol error, compressed mode runtime error, cell update occurred, invalid configuration , configuration incomplete, unsupported measuremen t, MBMS session already received correctly, lower priority MBMS service) | Five spare values are needed. |

#### 10.3.3.14 Failure cause and error information

Cause for failure to perform the requested procedure.

| Information Element/Group | Need | Multi | Type and  | Semantics description |
|---------------------------|------|-------|-----------|-----------------------|
| name                      |      |       | reference |                       |
| Failure cause             | MP   |       | Failure   |                       |
|                           |      |       | cause     |                       |
|                           |      |       | 10.3.3.13 |                       |

| Protocol error information | CV-ProtErr | Protocol    |  |
|----------------------------|------------|-------------|--|
|                            |            | error       |  |
|                            |            | information |  |
|                            |            | 10.3.8.12   |  |
| Deleted TGPSI              | CV-        | TGPSI       |  |
|                            | CompMod    | 10.3.6.82   |  |
|                            | eErr       |             |  |

| Condition   | Explanation   |
|-------------|---|
| ProtErr     | The IE is mandatory present if the IE "Failure cause" |
|             | has the value "Protocol error"; otherwise it is not   |
|             | needed in the message.                                |
| CompModeErr | The IE is mandatory present if the IE "Failure cause" |
| ·           | has the value " Compressed mode runtime error";       |
|             | otherwise it is not needed in the message             |

### 10.3.3.14o Group release information

Contains addressing information to perform a release of a group of RRC connections.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| U-RNTI group                   | MP   |       | U-RNTI             |                       | REL-5   |
|                                |      |       | group              |                       |         |
|                                |      |       | 10.3.3.47a         |                       |         |

#### 10.3.3.14a H-RNTI

The H-RNTI identifies an UE having a HS-PDSCH assignment within a cell.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| H-RNTI                         | MP   |       | bit string(16)     |                       | REL-5   |

### 10.3.3.15 Initial UE identity

This information element identifies the UE at a request of an RRC connection.

| Information Element/Group | Need | Multi | Type and       | Semantics description |
|---------------------------|------|-------|----------------|-----------------------|
| name                      |      |       | reference      |                       |
| CHOICE UE id type         | MP   |       |                |                       |
| >IMSI (GSM-MAP)           |      |       | IMSI (GSM-     |                       |
|                           |      |       | MAP)           |                       |
|                           |      |       | 10.3.1.5       |                       |
| >TMSI and LAI (GSM-MAP)   |      |       |                |                       |
| >>TMSI (GSM-MAP)          | MP   |       | TMSI (GSM-     |                       |
|                           |      |       | MAP)           |                       |
|                           |      |       | 10.3.1.17      |                       |
| >>LAI (GSM-MAP)           | MP   |       | Location       |                       |
|                           |      |       | Area           |                       |
|                           |      |       | Identification |                       |
|                           |      |       | 10.3.1.7       |                       |
| >P-TMSI and RAI (GSM-MAP) |      |       |                |                       |
| >>P-TMSI (GSM-MAP)        | MP   |       | P-TMSI         |                       |
|                           |      |       | (GSM-MAP)      |                       |
|                           |      |       | 10.3.1.13      |                       |
| >>RAI (GSM-MAP)           | MP   |       | Routing Area   |                       |
|                           |      |       | Identification |                       |
|                           |      |       | 10.3.1.16      |                       |
| >IMEI                     |      |       | IMEI           |                       |
|                           |      |       | 10.3.1.4       |                       |

| >ESN (DS-41)          |    | Bit string<br>(SIZE (32))       | TIA/EIA/IS-2000-4   |
|-----------------------|----|---------------------------------|---|
| >IMSI (DS-41)         |    | Octet string<br>(SIZE (57))     | TIA/EIA/IS-2000-4   |
| >IMSI and ESN (DS-41) |    |                                 | TIA/EIA/IS-2000-4   |
| >>IMSI (DS-41)        | MP | Octet string<br>(SIZE (57))     | TIA/EIA/IS-2000-4   |
| >>ESN (DS-41)         | MP | Bit string<br>(SIZE (32))       | TIA/EIA/IS-2000-4   |
| >TMSI (DS-41)         |    | Octet string<br>(SIZE<br>(217)) | TIA/EIA/IS-2000-4 Although normally upto 12 digits are used for this IE, a bigger length is used to support future extension. |

### 10.3.3.16 Integrity check info

The Integrity check info contains the RRC message sequence number needed in the calculation of XMAC-I [40] and the calculated MAC-I.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| Message authentication code    | MP   |       | bit string(32)     | MAC-I [40]. The first/leftmost bit of the bit string contains the most significant bit of the MAC-I. The 27 MSB of the IE shall be set to zero and the 5 LSB of the IE shall be set to the value of the IE "RB identity" for the used signalling radio bearer when the encoded RRC message is used as the MESSAGE parameter in the integrity protection algorithm. |
| RRC Message sequence number    | MP   |       | Integer<br>(015)   | The local RRC hyper frame number (RRC HFN) is concatenated with the RRC message sequence number to form the input parameter COUNT-I for the integrity protection algorithm.  The IE value shall be set to zero when the encoded RRC message is used as the MESSAGE parameter in the integrity protection algorithm.  |

### 10.3.3.17 Integrity protection activation info

This IE contains the time, in terms of RRC sequence numbers, when a new integrity protection configuration shall be activated for the signalling radio bearers.

| Information Element/Group        | Need | Multi  | Type and          | Semantics description  |
|----------------------------------|------|--------|-------------------|--|
| RRC message sequence number list | MP   | 4 to 5 | reference         | The RRC sequence number when a new integrity protection configuration shall be applied, for signalling radio bearers in the order RB0, RB1, RB2, RB3, RB4.  The value for RB1 shall be ignored if this IE was included in a RRC message sent on RB1.  The value for RB2 shall be ignored if this IE was included in a RRC message sent on RB1. |
| >RRC message sequence number     | MP   |        | Integer (0<br>15) |  |

### 10.3.3.18 Integrity protection Algorithm

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| Integrity protection algorithm | MP   |       | Enumerated (UIA1   |                       |         |
|                                |      |       | , UIA2)            |                       | REL-7   |

### 10.3.3.19 Integrity protection mode info

| Information Element/Group           | Need      | Multi | Type and       | Semantics description              |
|-------------------------------------|-----------|-------|----------------|------------------------------------|
| name                                |           |       | reference      |                                    |
| Integrity protection mode           | MP        |       | Enumerated(    |                                    |
| command                             |           |       | start, modify) |                                    |
| Downlink integrity protection       | CV-modify |       | Integrity      |                                    |
| activation info                     |           |       | protection     |                                    |
|                                     |           |       | activation     |                                    |
|                                     |           |       | info           |                                    |
|                                     |           |       | 10.3.3.17      |                                    |
| Integrity protection algorithm      | OP        |       | Integrity      |                                    |
|                                     |           |       | protection     |                                    |
|                                     |           |       | algorithm      |                                    |
|                                     |           |       | 10.3.3.18      |                                    |
| Integrity protection initialisation | CV-start  |       | Bit string(32) | FRESH [40]. The first/leftmost     |
| number                              |           |       |                | bit of the bit string contains the |
|                                     |           |       |                | most significant bit of the        |
|                                     |           |       |                | FRESH.                             |

| Condition | Explanation  |
|-----------|--|
| Start     | The IE is mandatory present if the IE "Integrity protection mode command" has the value "start ", otherwise it is not needed in the message. |
| Modify    | The IE is mandatory present if the IE "Integrity protection mode command" has the value "modify" and not needed otherwise.                   |

#### 10.3.3.19a Void

10.3.3.20 Void

### 10.3.3.21 Measurement capability

| Information Element/Group name | Need                         | Multi | Type and reference | Semantics description  | Version                     |
|--------------------------------|------------------------------|-------|--------------------|--|-----------------------------|
| Need for downlink              |                              |       | 1010101100         | uoconpilon   |                             |
| compressed mode                |                              |       |                    |  |                             |
| FDD measurements               | MP                           |       | Boolean            | TRUE means that<br>the UE requires<br>DL compressed<br>mode in order to<br>perform<br>measurements on<br>FDD           |                             |
| 3.84 Mcps TDD measurements     | CV-<br>3.84_Mcps<br>_tdd_sup |       | Boolean            | TRUE means that the UE requires DL compressed mode in order to perform measurements on 3.84 Mcps TDD                   | Name<br>changed<br>in REL-4 |
| 7.68 Mcps TDD measurements     | CV-<br>7.68_Mcps<br>_tdd_sup |       | Boolean            | TRUE means that<br>the UE requires<br>DL compressed<br>mode in order to<br>perform<br>measurements on<br>7.68 Mcps TDD | REL-7                       |
| 1.28 Mcps TDD measurements     | CV-<br>1.28_Mcps<br>_tdd_sup |       | Boolean            | TRUE means that<br>the UE requires<br>DL compressed<br>mode in order to<br>perform<br>measurements on<br>1.28 Mcps TDD | REL-4                       |
| GSM measurements               | CV-<br>gsm_sup               |       |                    |  |                             |
| >GSM 900                       | MP                           |       | Boolean            | TRUE means that<br>the UE requires<br>DL compressed<br>mode in order to<br>perform<br>measurements on<br>GSM 900       |                             |
| >DCS 1800                      | MP                           |       | Boolean            | TRUE means that<br>the UE requires<br>DL compressed<br>mode in order to<br>perform<br>measurements on<br>DCS 1800      |                             |
| >GSM 1900                      | MP                           |       | Boolean            | TRUE means that<br>the UE requires<br>DL compressed<br>mode in order to<br>perform<br>measurements on<br>GSM 1900      |                             |
| Multi-carrier measurement      | CV-<br>mc_sup                |       | Boolean            | TRUE means that the UE requires DL compressed mode in order to perform measurements on                                 |                             |

| Information Element/Group name | Need                         | Multi | Type and reference | Semantics description  | Version                     |
|--------------------------------|------------------------------|-------|--------------------|--|-----------------------------|
| Need for uplink compressed     |                              |       |                    | multi-carrier  |                             |
| mode                           |                              |       |                    |  |                             |
| FDD measurements               | MP                           |       | Boolean            | TRUE means that<br>the UE requires<br>UL compressed<br>mode in order to<br>perform<br>measurements on<br>FDD           |                             |
| 3.84 Mcps TDD measurements     | CV-<br>3.84_Mcps<br>_tdd_sup |       | Boolean            | TRUE means that the UE requires UL compressed mode in order to perform measurements on 3.84 Mcps TDD                   | Name<br>changed<br>in REL-4 |
| 7.68 Mcps TDD measurements     | CV-<br>7.68_Mcps<br>_tdd_sup |       | Boolean            | TRUE means that<br>the UE requires<br>UL compressed<br>mode in order to<br>perform<br>measurements on<br>7.68 Mcps TDD | REL-7                       |
| 1.28 Mcps TDD measurements     | CV-<br>1.28_Mcps<br>_tdd_sup |       | Boolean            | TRUE means that<br>the UE requires<br>DL compressed<br>mode in order to<br>perform<br>measurements on<br>1.28 Mcps TDD | REL-4                       |
| GSM measurements               | CV-<br>gsm_sup               |       |                    |  |                             |
| >GSM 900                       | MP                           |       | Boolean            | TRUE means that<br>the UE requires<br>UL compressed<br>mode in order to<br>perform<br>measurements on<br>GSM 900       |                             |
| >DCS 1800                      | MP                           |       | Boolean            | TRUE means that the UE requires UL compressed mode in order to perform measurements on DCS 1800                        |                             |
| >GSM 1900                      | MP                           |       | Boolean            | TRUE means that the UE requires UL compressed mode in order to perform measurements on GSM 1900                        |                             |
| Multi-carrier measurement      | CV-<br>mc_sup                |       | Boolean            | TRUE means that the UE requires UL compressed mode in order to perform measurements on multi-carrier                   |                             |

| Condition         | Explanation   |
|-------------------|---|
| 3.84_Mcps_tdd_sup | The IE is mandatory present if an IE "TDD RF capability" is present with the IE "Chip rate capability" set to "3.84 Mcps". Otherwise this field is not needed in the message.         |
| 7.68_Mcps_tdd_sup | The IE is mandatory present if an IE "TDD RF capability" is present with the IE "Chip rate capability" set to "7.68 Mcps". Otherwise this field is not needed in the message.         |
| 1.28_Mcps_tdd_sup | The IE is mandatory present if an IE "TDD RF capability" is present with the IE "Chip rate capability" set to "1.28 Mcps". Otherwise this field is not needed in the message.         |
| gsm_sup           | The IE is mandatory present if the IE "Inter-RAT UE radio access capability" indicates support for GSM900, GSM1800 and/or GSM1900. Otherwise this field is not needed in the message. |
| mc_sup            | The IE is mandatory present if the IE "Support of multi-carrier" has the value TRUE. Otherwise this field is not needed in the message.   |

### 10.3.3.21a Measurement capability extension

This IE may be used to replace the measurement capability information provided within IE "Measurement capability".

| Information<br>Element/Group name | Need | Multi   | Type and reference  | Semantics description   | Version |
|-----------------------------------|------|---|---|---|---------|
| FDD measurements                  | MP   | 1 to<br><maxfre<br>qBands<br/>FDD&gt;</maxfre<br> |   | The network should ignore the entry that includes the 'extension indicator'.  |         |
| >FDD Frequency band               | MD   |   | Enumerat<br>ed(Band<br>I, Band II,                                      | The default value is the same as indicated in the IE "Frequency band" included in the IE " UE radio access capability extension". Band numbering is defined in [21].  |         |
|                                   |      |   | Band III,   |   | REL-5   |
|                                   |      |   | Band VI,<br>Band IV,<br>Band V,<br>Band VII,<br>extension<br>indicator) | The default value is the same as R99, if the IE "FDD Frequency band 2" below is not included. The default value is the same as the IE "FDD Frequency band 2", if the IE "FDD Frequency band 2" is included.  The setting of the value 'extension indicatior' by the UE is not specified in the specification. | REL-6   |

| Information<br>Element/Group name | Need               | Multi   | Type and reference   | Semantics description  | Version |
|-----------------------------------|--------------------|---|--|--|---------|
| >FDD Frequency band 2             | MD                 |   | Enumerat<br>ed(Band<br>VIII, Band<br>IX, Band<br>X,<br>extension<br>Indicator) | The default value is the same as indicated in the IE "Frequency band 2" included in the IE " UE radio access capability extension"., if the IE "FDD Frequency band" above is not included. The default value is the same as the IE "FDD Frequency band", if the IE "FDD Frequency band", if the IE "FDD Frequency band" is included. The setting of the value 'extension indicatior' by the UE is not specified in the specification. Twelve spare values are needed | REL-6   |
| >Need for DL<br>compressed mode   | MP                 |   | Boolean  | TRUE means that the UE requires DL compressed mode in order to perform measurements on the FDD frequency band indicated by the IE "FDD Frequency band"   |         |
| >Need for UL<br>compressed mode   | MP                 |   | Boolean  | TRUE means that the UE requires UL compressed mode in order to perform measurements on the FDD frequency band indicated by the IE "FDD Frequency band"   |         |
| TDD measurements                  | CV-<br>tdd_sup     | 1 to<br><maxfre<br>qBands<br/>TDD&gt;</maxfre<br> |  |  |         |
| >TDD Frequency band               | MP                 |   | Enumerat<br>ed(a, b, c)<br>Enumerat<br>ed(a, b, c,<br>d)                       |  | REL-7   |
| >Need for DL<br>compressed mode   | MP                 |   | Boolean  | TRUE means that the UE requires DL compressed mode in order to perform measurements on TDD frequency band indicated by the IE "TDD Frequency band"   |         |
| >Need for UL<br>compressed mode   | MP                 |   | Boolean  | TRUE means that the UE requires UL compressed mode in order to perform measurements on TDD frequency band indicated by the IE "TDD Frequency band"   |         |
| GSM measurements                  | CV-<br>gsm_su<br>p | 1 to<br><maxfre<br>qBands<br/>GSM&gt;</maxfre<br> |  | , ,,   |         |

| Information<br>Element/Group name | Need          | Multi | Type and reference  | Semantics description  | Version |
|-----------------------------------|---------------|-------|---|--|---------|
| >GSM Frequency band               | MP            |       | Enumerat<br>ed(GSM4<br>50,<br>GSM480,<br>GSM850,<br>GSM900<br>P,<br>GSM900<br>E,<br>GSM1800 | as defined in [45].<br>Nine spare values are<br>needed.  |         |
| >Need for DL<br>compressed mode   | MP            |       | Boolean   | TRUE means that the UE requires DL compressed mode in order to perform measurements on GSM frequency band indicated by the IE "GSM Frequency band" |         |
| >Need for UL<br>compressed mode   | MP            |       | Boolean   | TRUE means that the UE requires UL compressed mode in order to perform measurements on GSM frequency band indicated by the IE "GSM Frequency band" |         |
| Multi-carrier<br>measurement      | CV-<br>mc_sup |       |   |  |         |
| >Need for DL<br>compressed mode   | MP            |       | Boolean   | TRUE means that the UE requires DL compressed mode in order to perform measurements on multicarrier  |         |
| >Need for UL<br>compressed mode   | MP            |       | Boolean   | TRUE means that the UE requires UL compressed mode in order to perform measurements on multicarrier  |         |

| Condition | Explanation   |
|-----------|---|
| tdd_sup   | The IE is mandatory present if the IE "Multi-mode   |
|           | capability" has the value "TDD" or "FDD/TDD".   |
|           | Otherwise this field is not needed in the message.  |
| gsm_sup   | The IE is mandatory present if the IE "Support of GSM" has the value TRUE. Otherwise this field is not needed in the message.           |
| mc_sup    | The IE is mandatory present if the IE "Support of multi-carrier" has the value TRUE. Otherwise this field is not needed in the message. |

## 10.3.3.22 Paging cause

Cause for a CN originated page.

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description      |
|--------------------------------|------|-------|--|----------------------------|
| Paging cause                   | MP   |       | Enumerated( Terminating Conversatio nal Call, Terminating Streaming Call, Terminating Interactive Call, Terminating Background Call, Terminating High Priority Signalling, Terminating Low Priority | One spare value is needed. |

## 10.3.3.23 Paging record

| Information                               | Need | Multi | Type and                         | Semantics                      | Version |
|---|------|-------|----------------------------------|--------------------------------|---------|
| Element/Group name                        |      |       | reference                        | description                    |         |
| CHOICE Used paging                        | MP   |       |                                  |                                |         |
| identity                                  |      |       |                                  |                                |         |
| >CN identity                              |      |       |                                  |                                |         |
| >>Paging cause                            | MP   |       | Paging cause 10.3.3.22           |                                |         |
| >>CN domain identity                      | MP   |       | CN domain identity 10.3.1.1      |                                |         |
| >>CHOICE UE Identity                      | MP   |       |                                  | Three spare values are needed. |         |
| >>>IMSI (GSM-MAP)                         |      |       | IMSI (GSM-<br>MAP) 10.3.1.5      |                                |         |
| >>>TMSI (GSM-MAP)                         |      |       | TMSI (GSM-<br>MAP)<br>10.3.1.17  |                                |         |
| >>>P-TMSI (GSM-MAP)                       |      |       | P-TMSI<br>(GSM-MAP)<br>10.3.1.13 |                                |         |
| >>>IMSI (DS-41)                           |      |       | Octet string<br>(SIZE (57))      | TIA/EIA/IS-2000-4              |         |
| >>>TMSI (DS-41)                           |      |       | Octet string<br>(SIZE (217))     | TIA/EIA/IS-2000-4              |         |
| >UTRAN single UE identity                 |      |       |                                  |                                |         |
| >>U-RNTI                                  | MP   |       | U-RNTI<br>10.3.3.47              |                                |         |
| >>CN originated page to connected mode UE | OP   |       |                                  |                                |         |
| >>>Paging cause                           | MP   |       | Paging cause 10.3.3.22           |                                |         |

| Information Element/Group name       | Need | Multi  | Type and reference                            | Semantics description | Version |
|--------------------------------------|------|--|---|-----------------------|---------|
| >>>CN domain identity                | MP   |  | CN domain identity 10.3.1.1                   |                       |         |
| >>>Paging record type identifier     | MP   |  | Paging record type identifier 10.3.1.10       |                       |         |
| >>RRC connection release information | MP   |  | RRC connection release information 10.3.3.350 |                       | REL-5   |
| >UTRAN group identity                |      | 1 to<br><maxur<br>NTIgrou<br/>p&gt;</maxur<br> |   |                       | REL-5   |
| >>RRC connection release information | MP   |  | RRC connection release information 10.3.3.350 |                       | REL-5   |
| >>Group release information          | MP   |  | Group release information 10.3.3.140          |                       | REL-5   |

| Condition                   | Explanation                                     |
|-----------------------------|---|
| CHOICE Used paging identity | Condition under which the given used paging     |
|                             | identity is chosen                              |
| CN identity                 | For CN originating pages (for idle mode UEs)    |
| UTRAN single UE identity    | For UTRAN originating pages (for connected mode |
|                             | UEs), addressing a single UE                    |
| UTRAN group identity        | For UTRAN originating pages (for connected mode |
|                             | UEs), addressing a group of UEs                 |

## 10.3.3.24 PDCP capability

Indicates which algorithms and which value range of their parameters are supported by the UE.

| Information Element/Group name              | Need                        | Multi | Type and reference   | Semantics description                             | Version |
|---|-----------------------------|-------|--|---|---------|
| Support for lossless SRNS relocation        | MP                          |       | Boolean  | TRUE means supported                              |         |
| Support for lossless DL RLC PDU size change | CV-<br>not_iRAT_<br>HoInfo2 |       | Boolean  | TRUE means<br>supported Default<br>value is FALSE | REL-5   |
| Support for RFC2507                         | MP                          |       | Boolean  | TRUE means supported                              |         |
| >Max HC context space                       | MP                          |       | Integer(1024<br>, 2048, 4096,<br>8192,   |   |         |
|   |                             |       | 16384,<br>32768,<br>65536,<br>131072)  | Note 1  | REL-5   |
| Support for RFC 3095                        | CV-<br>not_iRAT_<br>HoInfo  |       | Boolean  | TRUE means supported                              | REL-4   |
| >Maximum number of ROHC context sessions    | MD                          |       | Integer( 2, 4,<br>8, 12, 16, 24,<br>32, 48, 64,<br>128, 256,<br>512, 1024,<br>16384) | Default value is<br>16.                           | REL-4   |
| >Reverse decompression depth                | MD                          |       | Integer  | Default value is 0                                | REL-4   |

| Information Element/Group name                     | Need | Multi          | Type and reference | Semantics description                     | Version   |
|--|------|----------------|--------------------|---|-----------|
|  |      |                | (065535)           | (reverse decompression is not supported). |           |
| >Support for RFC 3095 context relocation           | MP   |                | Boolean            | TRUE means supported                      | REL-5     |
| Note 1: The IE "Max HC contex<br>RAT HANDOVER INFO | •    | es 16384, 3276 | 68, 65536 and 1    | 31072 are not used in                     | the INTER |

| Condition        | Explanation                                       |
|------------------|---|
| not_iRAT_HoInfo  | The IE is not needed in the INTER RAT HANDOVER    |
|                  | INFO message. Otherwise, it is mandatory present. |
| not_iRAT_HoInfo2 | The IE is not needed in the INTER RAT HANDOVER    |
|                  | INFO message. Otherwise, it is mandatory default. |

# 10.3.3.25 Physical channel capability

| I | Information Element/Group | Need | Multi | Type and  | Semantics   | Version |
|---|---------------------------|------|-------|-----------|-------------|---------|
|   | name                      |      |       | Reference | description |         |

| Information Element/Group name                            | Need                                 | Multi | Type and Reference  | Semantics description  | Version                     |
|---|--------------------------------------|-------|---|--|-----------------------------|
| Downlink physical channel capability information elements |                                      |       |   |  |                             |
| FDD downlink physical channel capability                  | CH-<br>fdd_req_su<br>p               |       |   |  |                             |
| >Max no DPCH codes  | MP                                   |       | Integer<br>(18)   | Maximum number of DPCH codes to be simultaneously received   |                             |
| >Max no physical channel bits received                    | MP                                   |       | Integer<br>(1200, 2400,<br>3600, 4800,<br>7200, 9600,<br>14400,<br>19200,<br>28800,<br>38400,<br>48000,<br>57600,<br>67200,<br>76800) | Maximum number of physical channel bits received in any 10 ms interval (DPCH, S-CCPCH)                         |                             |
| >Support for SF 512 and 80 ms<br>TTI for DPCH             | MP                                   |       | Boolean   | TRUE means supported   |                             |
| >CHOICE Support of HS-<br>PDSCH                           | CV-<br>not_iRAT_<br>HoInfo           |       |   |  | REL-5                       |
| >>Supported   |                                      |       |   |  | REL-5                       |
| >>>HS-DSCH physical layer category                        | MP                                   |       | Integer<br>(164)  | As defined in [35].<br>Values 1364 are<br>spares.<br>See Note 5.   | REL-5                       |
| >>>HS-DSCH physical layer category extension              | OP                                   |       | Integer<br>(120)  | As defined in [35].<br>See Note 6<br>See Note 7  | REL-7                       |
| >>>HS-SCCHless HS-DSCH operation support                  | OP                                   |       | Enumerated<br>(TRUE)  | The absence of this IE indicates that the UE does not support HS-SCCHless HS-DSCH operation.                   | REL-7                       |
| >>>Enhanced F-DPCH support                                | OP                                   |       | Enumerated<br>(TRUE)  | The absence of this IE indicates that the UE does not support enhanced F-DPCH                                  | REL-7                       |
| >>>HS-PDSCH in CELL_FACH                                  | OP                                   |       | Enumerated<br>(TRUE)  | The absence of<br>this IE indicates<br>that the UE does<br>not support HS-<br>PDSCH reception<br>in CELL_FACH  | REL-7                       |
| >>>HS-PDSCH in CELL_PCH and URA_PCH                       | OP                                   |       | Enumerated<br>(TRUE)  | The absence of this IE indicates that the UE does not support HS-PDSCH in neither CELL_PCH nor URA_PCH states. | REL-7                       |
| >>Unsupported   |                                      |       |   | (no data)  | REL-5                       |
| 3.84 Mcps TDD downlink physical channel capability        | CH-<br>3.84_Mcps<br>_tdd_req_s<br>up |       |   |  | Name<br>changed<br>in REL-4 |
| >Maximum number of timeslots                              | MP                                   |       | Integer   |  |                             |
|   |                                      |       |   |  |                             |

| Information Element/Group name                     | Need  | Multi | Type and Reference | Semantics description   | Version |
|--|---|-------|--------------------|---|---------|
| per frame  |   |       | (114)              |   |         |
| >Maximum number of physical channels per frame     | MP  |       | Integer<br>(1224)  |   |         |
| >Minimum SF  | MP  |       | Integer (1, 16)    |   |         |
| >Support of PDSCH                                  | MP  |       | Boolean            | TRUE means supported  |         |
| >CHOICE Support of HS-<br>PDSCH                    | CV-<br>not_iRAT_<br>HoInfo                                  |       |                    |   | REL-5   |
| >>Supported  |   |       |                    |   | REL-5   |
| >>>HS-DSCH physical layer category                 | MP  |       | Integer<br>(164)   | As defined in [35]  | REL-5   |
| >>Unsupported                                      |   |       |                    | (no data)   | REL-5   |
| >Maximum number of physical channels per timeslot  | MP  |       | Integer<br>(516)   | (s aata)  |         |
| 7.68 Mcps TDD downlink physical channel capability | CH-<br>7.68_ <i>Mcps</i><br>_ <i>tdd_req_s</i><br><i>up</i> |       |                    |   | REL-7   |
| >Maximum number of timeslots per frame             | MP  |       | Integer<br>(114)   |   | REL-7   |
| >Maximum number of physical channels per frame     | MP  |       | Integer<br>(1448)  |   | REL-7   |
| >Minimum SF  | MP  |       | Integer (1, 32)    |   | REL-7   |
| >Support of PDSCH                                  | MP  |       | Boolean            | TRUE means supported  | REL-7   |
| >CHOICE Support of HS-<br>PDSCH                    | CV-<br>not_iRAT_<br>HoInfo                                  |       |                    |   | REL-7   |
| >>Supported  |   |       |                    |   | REL-7   |
| >>>HS-DSCH physical layer category                 | MP  |       | Integer<br>(164)   | As defined in [35]  | REL-7   |
| >>Unsupported                                      |   |       |                    | (no data)   | REL-7   |
| >Maximum number of physical channels per timeslot  | MP  |       | Integer<br>(132)   |   | REL-7   |
| 1.28 Mcps TDD downlink physical channel capability | CH-<br>1.28_Mcps<br>_tdd_req_s<br>up                        |       |                    |   | REL-4   |
| >Maximum number of timeslots per subframe          | MP  |       | Integer (16)       |   | REL-4   |
| >Maximum number of physical channels per subframe  | MP  |       | Integer<br>(196)   |   | REL-4   |
| >Minimum SF  | MP  |       | Integer (1,<br>16) |   | REL-4   |
| >Support of PDSCH                                  | MP  |       | Boolean            | TRUE means supported  | REL-4   |
| >CHOICE Support of HS-<br>PDSCH                    | CV-<br>not_iRAT_<br>HoInfo                                  |       |                    |   | REL-5   |
| >>Supported  |   |       |                    |   | REL-5   |
| >>>HS-DSCH physical layer category                 | MP  |       | Integer<br>(164)   | As defined in [35]  | REL-5   |
| >>>Multi-carrier HS-DSCH physical layer category   | OP  |       | Integer<br>(164)   | As defined in [35] Absent if downlink multiple carrier is not supported | REL-7   |
| >>Unsupported                                      |   |       |                    | (no data)   | REL-5   |
| >Maximum number of physical channels per timeslot  | MP  |       | Integer<br>(116)   |   | REL-4   |
| >Support of 8PSK                                   | MP  |       | Boolean            | TRUE means supported  | REL-4   |
| Uplink physical channel                            |   |       |                    |   |         |

| Information Element/Group name                      | Need                                 | Multi | Type and Reference  | Semantics description  | Version                     |
|---|--------------------------------------|-------|---|--|-----------------------------|
| capability information elements                     |                                      |       |   |  |                             |
| FDD uplink physical channel capability              | CH-<br>fdd_req_su<br>p               |       |   |  |                             |
| >Maximum number of DPDCH bits transmitted per 10 ms | MP                                   |       | Integer (600,<br>1200, 2400,<br>4800. 9600,<br>19200.<br>28800,<br>38400,<br>48000,<br>57600) |  |                             |
| >CHOICE Support of E-DCH                            | CV-<br>not_iRAT_<br>HoInfo           |       |   |  | REL-6                       |
| >>Supported   |                                      |       |   |  | REL-6                       |
| >>>E-DCH physical layer category                    | MP                                   |       | Integer<br>(116)  | As defined in [35] in Rel-6 Values 7 to 16 are spares. See Note 4.                             | REL-6                       |
| >>>E-DCH physical layer category extension          | OP                                   |       | Integer (7)   | As defined in [35].  | REL-7                       |
| >>>DPCCH Discontinuous Transmission support         | OP                                   |       | Enumerated<br>(TRUE)  | The absence of this IE indicates that the UE does not support DPCCH Discontinuous Transmission | REL-7                       |
| >>>Slot Format #4 support                           | OP                                   |       | Enumerated<br>(TRUE)  | The absence of<br>this IE indicates<br>that the UE does<br>not support Slot<br>Format #4       | REL-7                       |
| >>Unsupported                                       |                                      |       |   | (no data)  | REL-6                       |
| 3.84 Mcps TDD uplink physical channel capability    | CH-<br>3.84_Mcps<br>_tdd_req_s<br>up |       |   |  | Name<br>changed<br>in REL-4 |
| >Maximum Number of timeslots per frame              | MP                                   |       | Integer<br>(114)  |  |                             |
| >Maximum number of physical channels per timeslot   | MP                                   |       | Integer<br>(1, 2)   |  |                             |
| >Minimum SF   | MP                                   |       | Integer<br>(1, 2, 4, 8)   |  |                             |
| >Support of PUSCH                                   | MP                                   |       | Boolean   | TRUE means supported   |                             |
| >CHOICE Support of E-DCH                            | CV-<br>not_iRAT_<br>HoInfo           |       |   |  | REL-7                       |
| >>Supported >>>E-DCH physical layer category        | MP                                   |       | Integer<br>(116)  | As defined in [35]   | REL-7                       |
| >>Unsupported                                       |                                      | -     |   | (no data)  | REL-7                       |
| 7.68 Mcps TDD uplink physical channel capability    | CH-<br>7.68_Mcps<br>_tdd_req_s<br>up |       |   |  | REL-7                       |
| >Maximum Number of timeslots per frame              | MP                                   |       | Integer<br>(114)  |  | REL-7                       |
| >Maximum number of physical channels per timeslot   | MP                                   |       | Integer<br>(1, 2)   |  | REL-7                       |
| >Minimum SF   | MP                                   |       | Integer   |  | REL-7                       |

| Information Element/Group name                          | Need                                 | Multi | Type and Reference             | Semantics description    | Version    |
|---|--------------------------------------|-------|--------------------------------|--------------------------|------------|
|   |                                      |       | (1, 2, 4, 8)                   |                          |            |
| >Support of PUSCH                                       | MP                                   |       | Boolean                        | TRUE means supported     | REL-7      |
| >CHOICE Support of E-DCH                                | CV-<br>not_iRAT_<br>HoInfo           |       |                                |                          | REL-7      |
| >>Supported   |                                      |       |                                |                          | REL-7      |
| >>>E-DCH physical layer category                        | MP                                   |       | Integer<br>(116)               | As defined in [35]       | REL-7      |
| >>Unsupported   |                                      |       |                                | (no data)                | REL-7      |
| 1.28 Mcps TDD uplink physical channel capability        | CH-<br>1.28_Mcps<br>_tdd_req_s<br>up |       |                                |                          | REL-4      |
| >Maximum Number of timeslots per subframe               | MP                                   |       | Integer<br>(16)                |                          | REL-4      |
| >Maximum number of physical channels per timeslot       | MP                                   |       | Integer<br>(1, 2,              |                          | REL-4      |
|   |                                      |       | 3, 4)                          |                          | REL-7      |
| >Minimum SF   | MP                                   |       | Integer<br>(1, 2, 4, 8,<br>16) |                          | REL-4      |
| >Support of PUSCH                                       | MP                                   |       | Boolean                        | TRUE means supported     | REL-4      |
| >Support of 8PSK  | MP                                   |       | Boolean                        | TRUE means supported     | REL-4      |
| >CHOICE Support of E-DCH                                | CV-<br>not_iRAT_<br>HoInfo           |       |                                |                          | REL-7      |
| >>Supported   |                                      |       |                                |                          | REL-7      |
| >>>E-DCH physical layer category                        | MP                                   |       | Integer (16)                   | As defined in [35]       | REL-7      |
| >>Unsupported   |                                      |       |                                | (no data)                | REL-7      |
| NOTE 1: Void.   | -                                    |       |                                | •                        |            |
| NOTE 2: Void.   |                                      |       |                                |                          |            |
| NOTE 3: Void.   |                                      |       |                                |                          |            |
| NOTE 4: All UEs supporting E-D physical capability cate |                                      |       | y between 1 and                | 6 for this IE even if th | e UE       |
| NOTE 5: All LIEs supporting HS.                         |                                      |       | acri hotivoon 1 o              | nd 10 for this IF avon   | if the LIF |

- NOTE 5: All UEs supporting HS-DSCH should signal a category between 1 and 12 for this IE even if the UE physical capability category is above 12. This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is not configured.
- NOTE 6: This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

  NOTE 7: In REL-7 the simultaneous configuration of MIMO and 64 QAM is not supported so a UE category
  19 shall be treated as category 17 by the UTRAN and a UE category 20 shall be treated as category
  18 by the UTRAN.

| Condition             | Explanation   |
|-----------------------|---|
| 3.84_Mcps_tdd_req_sup | The IE is mandatory present if the IE "TDD RF             |
|                       | capability" is present with the IE "Chip rate capability" |
|                       | set to "3.84 Mcps" and a 3.84 Mcps TDD capability         |
|                       | update has been requested in a previous message.          |
|                       | Otherwise this field is not needed in the message.        |
| 7.68_Mcps_tdd_req_sup | The IE is mandatory present if the IE "TDD RF             |
|                       | capability" is present with the IE "Chip rate capability" |
|                       | set to "7.68 Mcps" and a 7.68 Mcps TDD capability         |
|                       | update has been requested in a previous message.          |
|                       | Otherwise this field is not needed in the message.        |
| 1.28_Mcps_tdd_req_sup | The IE is mandatory present if the IE "TDD RF             |
|                       | capability" is present with the IE "Chip rate capability" |
|                       | set to "1.28 Mcps" and a 1.28 Mcps TDD capability         |
|                       | update has been requested in a previous message.          |
|                       | Otherwise this field is not needed in the message.        |
| fdd_req_sup           | The IE is mandatory present if the IE "Multi-mode         |
|                       | capability" has the value "FDD" or "FDD/TDD" and a        |
|                       | FDD capability update has been requested in a             |
|                       | previous message. Otherwise this field is not needed      |
| · DAT II I            | in the message.   |
| not_iRAT_HoInfo       | The CHOICE Support of HS-PDSCH is not needed in           |
|                       | the INTER RAT HANDOVER INFO message.                      |
| DAT Helpfe            | Otherwise, it is mandatory present.                       |
| not_iRAT_HoInfo       | The CHOICE Support of E-DCH is not needed in the          |
|                       | INTER RAT HANDOVER INFO message.                          |
|                       | Otherwise, it is mandatory present.                       |

### 10.3.3.26 Protocol error cause

This IE indicates the cause for a message or information that was not comprehended.

| Information Element/Group | Need | Multi | Type and reference | Semantics description        |
|---------------------------|------|-------|--------------------|------------------------------|
| name                      |      |       |                    |                              |
| Protocol error cause      | MP   |       | Enumerated         | Two spare values are needed. |
|                           |      |       | (ASN.1             |                              |
|                           |      |       | violation or       |                              |
|                           |      |       | encoding           |                              |
|                           |      |       | error,             |                              |
|                           |      |       | Message            |                              |
|                           |      |       | type non-          |                              |
|                           |      |       | existent or        |                              |
|                           |      |       | not                |                              |
|                           |      |       | implemented        |                              |
|                           |      |       |                    |                              |
|                           |      |       | , Message          |                              |
|                           |      |       | not                |                              |
|                           |      |       | compatible         |                              |
|                           |      |       | with receiver      |                              |
|                           |      |       | state,             |                              |
|                           |      |       | Information        |                              |
|                           |      |       | element            |                              |
|                           |      |       | value not          |                              |
|                           |      |       | comprehend         |                              |
|                           |      |       | ed,                |                              |
|                           |      |       | Information        |                              |
|                           |      |       | element            |                              |
|                           |      |       | missing,           |                              |
|                           |      |       | Message            |                              |
|                           |      |       | extension          |                              |
|                           |      |       | not                |                              |
|                           |      |       |                    |                              |
|                           |      |       | comprehend         |                              |
|                           |      |       | ed)                |                              |

#### 10.3.3.27 Protocol error indicator

This IE indicates whether a message was transmitted due to a protocol error or not.

| Information Element/Group name | Need | Multi | Type and<br>Reference | Semantics description   |
|--------------------------------|------|-------|-----------------------|---|
| Protocol error indicator       | MP   |       | Boolean               | TRUE means a protocol error occurred. FALSE means a protocol error did not occur. |

#### 10.3.3.28 RB timer indicator

This IE is used to indicate to UTRAN if the timers T314 or T315 has expired in the UE.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| T314 expired                   | MP   |       | Boolean            | TRUE means that the timer has expired or the stored value is zero. FALSE means that the timer has not expired. |
| T315 expired                   | MP   |       | Boolean            | TRUE means that the timer has expired or the stored value is zero. FALSE means that the timer has not expired. |

#### 10.3.3.29 Redirection info

This IE is used to redirect the UE to another frequency or other system. With the Release 6 version a list of cells may be provided to the UE, where cell selection shall be started.

| Information<br>Element/Group name | Need | Multi | Type and reference              | Semantics description | Version |
|-----------------------------------|------|-------|---------------------------------|-----------------------|---------|
| CHOICE Redirection Information    | MP   |       |                                 |                       |         |
| >Frequency info                   |      |       | Frequenc<br>y info<br>10.3.6.36 |                       |         |
| >Inter-RAT info                   |      |       | Inter-RAT<br>info<br>10.3.7.25  |                       |         |

#### 10.3.3.30 Re-establishment timer

This information element indicates which timer to associate with RAB.

| Information Element/Group | Need | Multi | Type and                            | Semantics description |
|---------------------------|------|-------|-------------------------------------|-----------------------|
| name                      |      |       | reference                           |                       |
| Re-establishment timer    | MP   |       | Enumerated(<br>useT314,<br>useT315) |                       |

### 10.3.3.31 Rejection cause

Cause for rejection of RRC connection establishment request.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Rejection cause                | MP   |       | Enumerated(        |                       |
|                                |      |       | congestion,        |                       |
|                                |      |       | unspecified)       |                       |

#### 10.3.3.32 Release cause

Cause for release of RRC connection.

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description      |
|--------------------------------|------|-------|---|----------------------------|
| Release cause                  | MP   |       | Enumerated (normal event, unspecified, pre-emptive release, congestion, re- establishme nt reject, user inactivity), directed signalling connection re- establishme nt) | One spare value is needed. |

# 10.3.3.32a RF Capability Compressed

| Information<br>Element/Group name           | Need | Multi  | Type and reference  | Semantics description  | Version |
|---|------|--|---|--|---------|
| CHOICE FDD                                  | MP   |  |   |  | REL-5   |
| >Supported                                  |      |  |   |  | REL-5   |
| >>RF capability band<br>FDD list Compressed | MP   | 1 <maxf<br>reqband<br/>sFDD&gt;</maxf<br>          |   |  | REL-5   |
|   |      | 1 <maxf<br>reqband<br/>sFDD-<br/>ext&gt;</maxf<br> |   |  | REL-6   |
| >>>RF Capability Band<br>FDD Compressed     | MP   |  | Enumerated (not supported, default TxRx separation)   | TX/RX frequency separation capability for the supported frequency band(s). Default is the TX/RX frequency separation defined in [21] for each frequency band. Two spare values are needed. | REL-5   |
| >Not supported                              |      |  | NULL  |  | REL-5   |
| CHOICE TDD-3.84Mcps                         | MP   |  |   |  | REL-5   |
| >Supported                                  |      |  |   |  | REL-5   |
| >>Radio Frequency<br>Band TDD List          | MP   |  | Enumerated (a,<br>b, c, a+b, a+c,<br>b+c, a+b+c)  | As defined in [22]. One spare value needed   | REL-5   |
|   |      |  | Enumerated (a,<br>b, c, d, a+b, a+c,<br>a+d, b+c, b+d,<br>c+d, a+b+c,<br>a+b+d, a+c+d,<br>b+c+d, a+b+c+d) |  | REL-7   |
| >Not supported                              |      |  | NULL  |  | REL-5   |
| CHOICE TDD-7.68Mcps                         | MP   |  |   |  | REL-7   |
| >Supported                                  |      |  |   |  | REL-7   |
| >>Radio Frequency<br>Band TDD List          | MP   |  | Enumerated (a,<br>b, c, d, a+b, a+c,<br>a+d, b+c, a+b+c,<br>a+b+d, a+c+d,<br>b+c+d, a+b+c+d)              | As defined in [22]. One spare value needed   | REL-7   |
| >Not supported                              |      |  | NULL  |  | REL-7   |
| CHOICE TDD-1.28Mcps                         | MP   |  |   |  | REL-5   |
| >Supported                                  |      |  |   |  | REL-5   |
| >>Radio Frequency<br>Band TDD List          | MP   |  | Enumerated (a,<br>b, c, a+b, a+c,<br>b+c, a+b+c)  | As defined in [22]. One spare value needed   | REL-5   |
|   |      |  | Enumerated (a,<br>b, c, d, a+b, a+c,<br>a+d, b+c, b+d,<br>c+d, a+b+c,<br>a+b+d, a+c+d,<br>b+c+d, a+b+c+d) |  | REL-7   |
| >Not supported                              |      |  | NULL  |  | REL-5   |

# 10.3.3.33 RF capability FDD

| Information Element/Group name | Need | Multi | Type and<br>Reference                      | Semantics description   | Version |
|--------------------------------|------|-------|--|---|---------|
| UE power class                 | MP   |       | Enumerated(<br>14)                         | As defined in [21]  |         |
| Tx/Rx frequency separation     | MP   |       | Enumerated(<br>default TxRx<br>separation) | Default is the<br>TX/RX frequency<br>separation defined<br>in [21] for each |         |

| Information Element/Group | Need | Multi | Type and  | Semantics        | Version |
|---------------------------|------|-------|-----------|------------------|---------|
| name                      |      |       | Reference | description      |         |
|                           |      |       |           | frequency band.  |         |
|                           |      |       |           | Two spare values |         |
|                           |      |       |           | are needed.      |         |

# 10.3.3.33a RF capability FDD extension

| Information Element/Group  | Need | Multi | Type and     | Semantics description          |
|----------------------------|------|-------|--------------|--------------------------------|
| name                       |      |       | Reference    |                                |
| UE power class extension   | MP   |       | Enumerated(  | As defined in [21]. A UE with  |
|                            |      |       | 14)          | UE power class 3bis signals    |
|                            |      |       |              | the value 3. Four spare values |
|                            |      |       |              | are needed                     |
| Tx/Rx frequency separation | MP   |       | Enumerated(  | Default is the TX/RX frequency |
|                            |      |       | default TxRx | separation defined in [21] for |
|                            |      |       | separation)  | each frequency band.           |
|                            |      |       |              | Two spare values are needed.   |

# 10.3.3.33b RF capability TDD

| Information<br>Element/Group name | Need | Multi | Type and Reference   | Semantics description                          | Version |
|-----------------------------------|------|-------|--|--|---------|
| UE power class                    | MP   |       | Enumerated (14)  | as defined in [22]                             |         |
| Radio frequency bands             | MP   |       | Enumerated(a,<br>b, c, a+b, a+c,<br>b+c, a+b+c)  | as defined in [22].<br>One spare value needed. |         |
|                                   |      |       | Enumerated (a,<br>b, c, d, a+b, a+c,<br>a+d, b+c, b+d,<br>c+d, a+b+c,<br>a+b+d, a+c+d,<br>b+c+d,<br>a+b+c+d) |  | REL-7   |
| Chip rate capability              | MP   |       | Enumerated(3.8 4Mcps, 1.28Mcps,  | as defined in [22]                             |         |
|                                   |      |       | 7.68 Mcps)   |  | REL-7   |

# 10.3.3.33c RF capability TDD 1.28 Mcps

| Information<br>Element/Group name | Need | Multi | Type and Reference   | Semantics description                       | Version |
|-----------------------------------|------|-------|--|---|---------|
| Radio frequency bands             | MP   |       | Enumerated(a,<br>b, c, a+b, a+c,<br>b+c, a+b+c)  | as defined in [22]. One spare value needed. |         |
|                                   |      |       | Enumerated (a,<br>b, c, d, a+b, a+c,<br>a+d, b+c, b+d,<br>c+d, a+b+c,<br>a+b+d, a+c+d,<br>b+c+d,<br>a+b+c+d) |   | REL-7   |

# 10.3.3.34 RLC capability

| Information<br>Element/Group name   | Need                           | Multi | Type and<br>Referenc<br>e                                      | Semantics description  | Version |  |
|---|--------------------------------|-------|--|--|---------|--|
| Total RLC AM buffer size  | MP                             |       | Integer<br>(10, 50,<br>100, 150,<br>500,<br>1000,<br>200, 300, | Total receiving and transmitting RLC AM buffer and MAC-hs reordering buffer capability in kBytes.  Note 1. | REL-5   |  |
|   |                                |       | 400, 750)  |  |         |  |
| Maximum RLC AM<br>Window Size   | MP                             |       | Integer(20<br>47,4095)   | Maximum supported<br>RLC TX and RX<br>window in UE   |         |  |
| Maximum number of AM entities   | MP                             |       | Integer<br>(4,5,6,8,1<br>6,30)                                 |  |         |  |
| Support for Two logical channel Configuration   | CV-<br>not_iRA<br>T_HoInf<br>o |       | Boolean  | TRUE means supported   | REL-7   |  |
| Note 1: The IE "Total RLC AM buffer size" values 200, 300, 400 and 750 are not used in the INTER RAT HANDOVER INFO message. |                                |       |  |  |         |  |

 Condition
 Explanation

 not\_iRAT\_HoInfo
 The IE is not needed in the INTER RAT HANDOVER INFO message. Otherwise, it is mandatory present.

#### 10.3.3.35 RLC re-establish indicator

This IE is used to re-configure AM RLC on c-plane and u-plane.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| RLC re-establish indicator     | MP   |       | Boolean            | TRUE means re-establish required FALSE means re-establish not required |

#### 10.3.3.350 RRC connection release information

Indicates whether the UE shall perform a release of the RRC connection.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description            | Version |
|--------------------------------|------|-------|--------------------|----------------------------------|---------|
| CHOICE Release indicator       | MD   |       |                    | Default value is<br>"No release" | REL-5   |
| >No release                    |      |       |                    |                                  | REL-5   |
| >Release                       |      |       |                    |                                  | REL-5   |
| >>Release cause                | MP   |       | Release            |                                  | REL-5   |
|                                |      |       | cause<br>10.3.3.32 |                                  |         |

### 10.3.3.35a RRC State Indicator

Indicates to a UE the RRC state to be entered.

| Information Element/Group | Need | Multi | Type and    | Semantics description |
|---------------------------|------|-------|-------------|-----------------------|
| name                      |      |       | reference   |                       |
| RRC State indicator       | MP   |       | Enumerated( |                       |
|                           |      |       | CELL_DCH,   |                       |
|                           |      |       | CELL_FACH   |                       |
|                           |      |       | ,           |                       |
|                           |      |       | CELL_PCH,   |                       |
|                           |      |       | URA_PCH)    |                       |

## 10.3.3.36 RRC transaction identifier

This IE contains an identification of the RRC procedure transaction local for the type of the message this IE was included within.

| Information           | Need | Multi | Type and  | Semantics description | Version |
|-----------------------|------|-------|-----------|-----------------------|---------|
| Element/Group name    |      |       | reference |                       |         |
| CHOICE RRC Tr Id type | MP   |       |           |                       | REL-5   |
| >Normal               |      |       |           |                       |         |
| >>RRC transaction     | MP   |       | Integer   |                       |         |
| identifier            |      |       | (03)      |                       |         |
| >Extended             |      |       |           |                       | REL-5   |
| >>RRC transaction     | MP   |       | Integer   |                       | REL-5   |
| identifier            |      |       | (015)     |                       |         |

| CHOICE RRC Tr Id type | Condition under which the given RRC Tr Id type is chosen    |
|-----------------------|---|
| Normal                | All cases where the RRC Tr Id type: Extended is not chosen. |
| Extended              | Optional in the MEASUREMENT CONTROL message. Mandatory in   |
|                       | the MEASUREMENT CONTROL FAILURE message.                    |

# 10.3.3.37 Security capability

| Information Element/Group name            | Need | Multi | Type and reference | Semantics description  | Version |
|---|------|-------|--------------------|--|---------|
| Ciphering algorithm capability            | MP   |       |                    |  |         |
| >UEA0                                     | MP   |       | Boolean            |  |         |
| >UEA1                                     | MP   |       | Boolean            |  |         |
| >UEA2                                     | MP   |       | Boolean            | The value TRUE means that UEA2 is fully interoperability tested.  If fully interoperability tested, also "Security capability indication" of "UE radio access capability compressed" shall be set to TRUE. | REL-7   |
| >Spare                                    | MP   | 13    | Boolean            | Shall be set to FALSE by UEs complying with this version of the protocol.  |         |
| Integrity protection algorithm capability | MP   |       |                    |  |         |
| >UIA1                                     | MP   |       | Boolean            | The value TRUE means that UIA1, Kasumi, is supported   |         |
| >UIA2                                     | MP   |       | Boolean            | The value TRUE means that UIA2 is fully interoperability tested. If fully interoperability tested, also "Security capability indication" of "UE radio access capability compressed" shall be set to TRUE.  | REL-7   |
| >Spare                                    | MP   | 14    | Boolean            | Shall be set to FALSE by UEs complying with this version of the protocol.  |         |

## 10.3.3.38 START

There is a START value per CN domain. The START is used to initialise the 20 MSBs of all hyper frame numbers (MAC-d HFN, RLC UM HFN, RLC AM HFN, RRC HFN) for a CN domain.

| Information Element/Group name | Need | Multi | Type and<br>Reference | Semantics description  |
|--------------------------------|------|-------|-----------------------|--|
| START                          | MP   |       | Bit string<br>(20)    | START [40]. The first/leftmost bit of the bit string contains the most significant bit of the START. |

### 10.3.3.39 Void

# 10.3.3.40 Transport channel capability

| Information Element/Group name                             | Need                     | Multi | Type and Reference  | Semantics description   |
|--|--------------------------|-------|---|---|
| Downlink transport channel capability information elements |                          |       |   |   |
| Max no of bits received                                    | MP                       |       | Integer(640,<br>1280, 2560,<br>3840, 5120,<br>6400, 7680,<br>8960, 10240,<br>20480,<br>40960,<br>81920,<br>163840)  | Maximum sum of number of bits of all transport blocks received at an arbitrary time instant                       |
| Max convolutionally coded bits received                    | MP                       |       | Integer(640,<br>1280, 2560,<br>3840, 5120,<br>6400, 7680,<br>8960, 10240,<br>20480,<br>40960,<br>81920,<br>163840)  | Maximum sum of number of bits of all convolutionally coded transport blocks received at an arbitrary time instant |
| Max turbo coded bits received                              | CV-<br>turbo_dec_<br>sup |       | Integer (640,<br>1280, 2560,<br>3840, 5120,<br>6400, 7680,<br>8960, 10240,<br>20480,<br>40960,<br>81920,<br>163840) | Maximum sum of number of bits of all turbo coded transport blocks received at an arbitrary time instant           |
| Maximum number of simultaneous transport channels          | MP                       |       | Integer(4, 8, 16, 32)   |   |
| Maximum number of simultaneous CCTrCH                      | MP                       |       | Integer (18)  |   |
| Max no of received transport blocks                        | MP                       |       | Integer(4, 8, 16, 32, 48, 64, 96, 128, 256, 512)  | Maximum total number of transport blocks received within TTIs that end at within the same 10ms interval           |
| Maximum number of TFC                                      | MP                       |       | Integer(16, 32, 48, 64, 96, 128, 256, 512, 1024)  |   |
| Maximum number of TF                                       | MP                       |       | Integer(32,<br>64, 128, 256,<br>512, 1024)  |   |

| Information Element/Group name                           | Need                     | Multi | Type and Reference   | Semantics description  |
|--|--------------------------|-------|--|--|
| Support for turbo decoding                               | MP                       |       | Boolean  | TRUE means supported   |
| Uplink transport channel capability information elements |                          |       |  |  |
| Max no of bits transmitted                               | MP                       |       | Integer(640,<br>1280, 2560,<br>3840, 5120,<br>6400, 7680,<br>8960, 10240,<br>20480,<br>40960,<br>81920,<br>163840) | Maximum sum of number of bits of all transport blocks transmitted at an arbitrary time instant                       |
| Max convolutionally coded bits transmitted               | MP                       |       | Integer(640,<br>1280, 2560,<br>3840, 5120,<br>6400, 7680,<br>8960, 10240,<br>20480,<br>40960,<br>81920,<br>163840) | Maximum sum of number of bits of all convolutionally coded transport blocks transmitted at an arbitrary time instant |
| Max turbo coded bits transmitted                         | CV-<br>turbo_enc_<br>sup |       | Integer(640,<br>1280, 2560,<br>3840, 5120,<br>6400, 7680,<br>8960, 10240,<br>20480,<br>40960,<br>81920,<br>163840) | Maximum sum of number of bits of all turbo coded transport blocks transmitted at an arbitrary time instant           |
| Maximum number of simultaneous transport channels        | MP                       |       | Integer(4, 8, 16, 32)  |  |
| Maximum number of simultaneous CCTrCH of DCH type        | CH-<br>tdd_req_su<br>p   |       | Integer (18)   |  |
| Max no of transmitted transport blocks                   | MP                       |       | Integer(4, 8,<br>16, 32, 48,<br>64, 96, 128,<br>256, 512)  | Maximum total number of transport blocks transmitted within TTIs that start at the same time                         |
| Maximum number of TFC                                    | MP                       |       | Integer(16,<br>32, 48, 64,<br>96, 128, 256,<br>512, 1024)  |  |
| Maximum number of TF                                     | MP                       |       | Integer(32,<br>64, 128, 256,<br>512, 1024)   |  |
| Support for turbo encoding                               | MP                       |       | Boolean  | TRUE means supported   |

| Condition     | Explanation   |
|---------------|---|
| turbo_dec_sup | The IE is mandatory present if the IE "Support of   |
|               | turbo decoding" = True. Otherwise this field is not needed in the message.  |
| turbo_enc_sup | The IE is mandatory present if the IE "Support of turbo encoding" = True. Otherwise this field is not needed in the message.  |
| tdd_req_sup   | The IE is mandatory present if the IE "Multi-mode capability" has the value "TDD" or "FDD/TDD" and a TDD capability update has been requested in a previous message. Otherwise this field is not needed in the message. |

# 10.3.3.41 UE multi-mode/multi-RAT capability

| Information<br>Element/Group name | Need                            | Multi | Type and<br>Referenc<br>e  | Semantics description   | Version |
|-----------------------------------|---------------------------------|-------|--|---|---------|
| Multi-RAT capability              |                                 |       |  |   |         |
| Support of GSM                    | MP                              |       | Boolean  |   |         |
| Support of multi-carrier          | MP                              |       | Boolean  |   |         |
| Multi-mode capability             | MP                              |       | Enumerat<br>ed (TDD,<br>FDD,<br>FDD/TDD                              |   |         |
| Support of UTRAN to<br>GERAN NACC | CV-<br>not_iRA<br>T_HoInf<br>o  |       | Boolean  |   | REL-5   |
| Support of Handover to GAN        | CV-<br>not_iRA<br>T_HoInf<br>o2 |       | Enumerat<br>ed (<br>DoesSup<br>portHand<br>overToGA<br>N)            | Absence of this IE means that the UE does not support Handover to GAN.                | REL-6   |
| Support of Inter-RAT PS handover  | CV-<br>not_iRA<br>T_HoInf<br>o2 |       | Enumerat<br>ed<br>(DoesSup<br>portInter-<br>RAT-PS-<br>Handover<br>) | Absence of this IE<br>means that the UE<br>does not support Inter-<br>RAT PS Handover | REL-6   |
| Support of PS Handover to GAN     | CV-<br>not_iRA<br>T_HoInf<br>o2 |       | Enumerat<br>ed<br>(DoesSup<br>portPSHa<br>ndoverTo<br>GAN)           | Absence of this IE means that the UE does not support PS Handover to GAN.             | REL-7   |

| Condition        | Explanation                                       |
|------------------|---|
| not_iRAT_HoInfo  | The IE is not needed in the INTER RAT HANDOVER    |
|                  | INFO message. Otherwise, it is mandatory present. |
| not_iRAT_HoInfo2 | The IE is not needed in the INTER RAT HANDOVER    |
|                  | INFO message. Otherwise, it is optional.          |

NOTE: The UE sets the capability of Inter-RAT PS Handover (by means of the IE "Support of Inter-RAT PS handover") to the same value as the corresponding GERAN capability in [5].

# 10.3.3.42 UE radio access capability

| Information Element/Group        | Need              | Multi | Type and              | Semantics   | Version |
|----------------------------------|-------------------|-------|-----------------------|---|---------|
| name                             |                   |       | reference             | description   |         |
| Access stratum release indicator | MP                |       | Enumerated(<br>R99)   | Indicates the release of the UE according to [35]. The IE also indicates the release of the RRC transfer syntax supported by the UE |         |
|                                  | CV-<br>not_rrc_co |       | Enumerated(<br>REL-4, | 12 spare values are needed.   | REL-4   |
|                                  | nnectionSe        |       | REL-5,                |   | REL-5   |
|                                  | tupComple         |       | REL-6,                |   | REL-6   |
|                                  | te                |       | REL-7)                |   | REL-7   |
| DL capability with simultaneous  | CV-               |       | Enumerated(           |   | REL-5   |

| Information Element/Group name                  | Need                   | Multi  | Type and reference   | Semantics<br>description   | Version        |
|---|------------------------|--------|--|--|----------------|
| HS-DSCH configuration                           | not_iRAT_<br>HoInfo    |        | 32kbps,<br>64kbps,<br>128kbps,<br>384kbps)                                       | иссентрист   |                |
| PDCP capability                                 | MP                     |        | PDCP capability 10.3.3.24  |  |                |
| RLC capability                                  | MP                     |        | RLC capability 10.3.3.34   |  |                |
| Transport channel capability                    | MP                     |        | Transport<br>channel<br>capability<br>10.3.3.40                                  |  |                |
| RF capability FDD                               | OP                     |        | RF capability<br>FDD<br>10.3.3.33  |  |                |
| RF capability TDD                               | OP                     | 1 to 2 | RF capability<br>TDD<br>10.3.3.33b   | One "TDD RF capability" entity shall be included for every Chip rate capability supported.  Note 1   | REL-4          |
| RF capability TDD 1.28 Mcps                     | CV-<br>iRAT_HoIn<br>fo | 1102   | RF capability<br>TDD 1.28<br>Mcps<br>10.3.3.33c                                  | Note 1   | REL-4          |
| Physical channel capability                     | MP                     |        | Physical channel capability 10.3.3.25  |  |                |
| UE multi-mode/multi-RAT capability              | MP                     |        | UE multi-<br>mode/multi-<br>RAT<br>capability<br>10.3.3.41                       |  |                |
| Security capability                             | MP                     |        | Security capability 10.3.3.37  |  |                |
| UE positioning capability                       | MP                     |        | UE positioning capability 10.3.3.45  |  |                |
| Measurement capability                          | OP                     |        | Measuremen<br>t capability<br>10.3.3.21  |  |                |
| Device type                                     | MD                     |        | Enumerated<br>(DoesNotBe<br>nefitFromBat<br>teryConsum<br>ptionOptimis<br>ation) | Absence of this value means that the device does benefit from NW-based battery consumption optimisation.  UE may set the value to DoesNotBenefitFr omBatteryConsumptionOptimisation when it does not foresee to particularly benefit from NW-based | REL-6          |
| Support for System Information Block type 11bis | OP                     |        | Enumerated (True)  | The IE shall be  | REL-6<br>REL-7 |

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   | Version |
|--------------------------------|------|-------|--------------------|-------------------------|---------|
|                                |      |       |                    | present and set to TRUE |         |

| Information Element/Group name                      | Need | Multi | Type and reference  | Semantics description  | Version |
|---|------|-------|---|--|---------|
| Support for F-DPCH                                  | OP   |       | Enumerated<br>(True)  | The IE shall be set to TRUE when F-DPCH is fully supported by the UE. Absence of this information element indicates that F-DPCH is not fully supported   | REL-6   |
| MAC-ehs support                                     | OP   |       | Enumerated<br>(TRUE)  | The presence of this IE indicates that UE supports MAC-ehs, the use of special value of HE field to indicate end of an SDU for RLC AM and octet aligned transport block table. The absence of this IE indicates that the UE does not support either MAC-ehs, octet aligned transport block table or the use of special value of HE field to indicate end of an SDU for RLC AM. | REL-7   |
| UE specific capability Information LCR TDD          | OP   |       | Enumerated<br>(NF,<br>TriRxUniTx,<br>TriRxTriTx,<br>HexRxUniTx<br>,<br>HexRxTriTx,<br>HexRxHexT | For 1.28 Mcps<br>TDD only<br>10 spare values<br>needed.  | REL-7   |
| Support for E-DPCCH Power Boosting                  | OP   |       | Enumerated<br>(TRUE)  | The IE shall be set to TRUE when E-DPCCH Power Boosting is fully supported by the UE.  Absence of this information element indicates that E-DPCCH Power Boosting is not fully supported  | REL-7   |
| Support for Two DRX schemes in URA_PCH and CELL_PCH | OP   |       | Enumerated<br>(TRUE)  | The absence of this IE indicates that the UE does not support Two DRX schemes in URA_PCH and CELL_PCH  | REL-7   |
| Support for E-DPDCH power interpolation formula     | OP   |       | Enumerated<br>(TRUE)  | The absence of<br>this IE indicates<br>that the UE does<br>not support E-  | REL-7   |

| Information Element/Group  | Need                       | Multi | Type and             | Semantics   | Version |
|--|----------------------------|-------|----------------------|---|---------|
| name   |                            |       | reference            | description   |         |
|  |                            |       |                      | DPDCH power<br>interpolation<br>formula when<br>16QAM is not<br>configured  |         |
| Support of TX Diversity on DL<br>Control Channels by MIMO<br>Capable UE when MIMO<br>operation is active | CV-<br>not_iRAT_<br>HoInfo |       | Enumerated<br>(TRUE) | The absence of this IE indicates that the MIMO capable UE does not support TX diversity on DL Control Channels (HS-SCCH, F-DPCH, E-AGCH, E-HICH, E-RGCH) when MIMO is active, P-CPICH is configured on antenna 1, and S-CPICH on antenna 2. | REL-7   |

Note 1: The second entity of the "RF capability TDD" is not needed in the INTER RAT HANDOVER INFO message: if both TDD 3.84/7.68 Mcps and TDD 1.28 Mcps are supported, the "RF capability TDD 1.28 Mcps" entity shall be used for TDD 1.28 Mcps; the "UE power class" in the "RF capability TDD" entity shall apply for both chip rates.

| Condition                       | Explanation                                    |
|---------------------------------|--|
| not_rrc_connectionSetupComplete | The IE is not needed in the RRC CONNECTION     |
|                                 | SETUP COMPLETE message. Otherwise the IE is    |
|                                 | mandatory present.                             |
| not_iRAT_HoInfo                 | The IE is not needed in the INTER RAT HANDOVER |
|                                 | INFO message. Otherwise, it is optional.       |
| iRAT_HoInfo                     | The IE is optional in the INTER RAT HANDOVER   |
|                                 | INFO message. Otherwise, the IE is not needed. |

# 10.3.3.420 UE radio access capability compressed

| Information Element/Group name                     | Need | Multi | Type and reference                   | Semantics description  | Version        |
|--|------|-------|--------------------------------------|--|----------------|
| Access stratum release indicator                   | MP   |       | Enumerated(<br>R99, REL-4,<br>REL-5, | 12 spare values are needed   | REL-5          |
|  |      |       | REL-6,<br>REL-7)                     |  | REL-6<br>REL-7 |
| Total AM RLC buffer size exceeds 10 kByte          | MP   |       | BOOLEAN                              |  | REL-5          |
| RF capability compressed                           | MP   |       | RF capability compressed 10.3.3.32a  |  | REL-5          |
| Support for System Information<br>Block type 11bis | OP   |       | Enumerated<br>(True)                 | The IE shall be present and set to TRUE  | REL-6<br>REL-7 |
| MAC-ehs support                                    | OP   |       | Enumerated<br>(True)                 | The presence of this IE indicates that UE supports MAC-ehs and octet aligned transport table. Absent if either MAC-ehs, octet aligned transport block table or the | REL-7          |

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description  | Version |
|--------------------------------|------|-------|----------------------|--|---------|
|                                |      |       |                      | use of special value<br>of HE field to<br>indicate end of an<br>SDU for RLC AM is<br>not supported |         |
| Security capability indication | OP   |       | Enumerated (True)    | TRUE indicates UE security capabilities beyond R99 requirements, see 10.3.3.37                     | REL-7   |
| GANSS support indication       | ОР   |       | Enumerated<br>(True) | TRUE indicates that the UE supports GANSS  | REL-7   |

# 10.3.3.42oa UE radio access capability comp 2

| Information Element/Group name                            | Need | Multi | Type and reference            | Semantics description   | Version |
|---|------|-------|-------------------------------|---|---------|
| FDD physical channel capability for HS-PDSCH/E-DCH        | OP   |       |                               | Absent if HS-<br>PDSCH and E-<br>DCH are not<br>supported                             | REL-6   |
| >DL capability with simultaneous<br>HS-DSCH configuration | OP   |       | Enumerated (32, 64, 128, 384) | Unit: kbps. This IE is always required, but the need is set to OP to align with ASN.1 | REL-6   |
| >HS-DSCH physical layer category                          | MP   |       | Integer (164)                 | As defined in [35] Values 1364 are spare.   | REL-6   |
| >HS-DSCH physical layer category extension                | OP   |       | Integer (120)                 | As defined in [35].<br>See Note 1   | REL-7   |
| >CHOICE Support of E-DCH                                  | MP   |       |                               |   | REL-6   |
| >>Supported   |      |       |                               |   | REL-6   |
| >>>E-DCH physical layer category                          | MP   |       | Integer (116)                 | As defined in [35]  | REL-6   |
| >>>E-DCH physical layer category extension                | OP   |       | Integer (7)                   | As defined in [35].   | REL-7   |
| >>Unsupported   |      |       |                               | (no data)   | REL-6   |

| Information Element/Group          | Need | Multi | Type and          | Semantics                        | Version |
|------------------------------------|------|-------|-------------------|----------------------------------|---------|
| name                               |      |       | reference         | description                      |         |
| Support for F-DPCH                 | OP   |       | Enumerated        |                                  | REL-6   |
|                                    |      |       | (True)            | The IE shall be set              | REL7    |
|                                    |      |       |                   | to TRUE when F-                  |         |
|                                    |      |       |                   | DPCH is fully                    |         |
|                                    |      |       |                   | supported by the                 |         |
|                                    |      |       |                   | UE.                              |         |
|                                    |      |       |                   | Absence of this                  |         |
|                                    |      |       |                   | information                      |         |
|                                    |      |       |                   | element indicates                |         |
|                                    |      |       |                   | that F-DPCH is not               |         |
|                                    |      |       |                   | fully supported                  |         |
| HS-SCCHless HS-DSCH                | OP   |       | Enumerated        | The absence of                   | REL-7   |
| operation support                  |      |       | (True)            | this IE indicates                |         |
|                                    |      |       |                   | that the UE does                 |         |
|                                    |      |       |                   | not support HS-                  |         |
|                                    |      |       |                   | SCCHless HS-                     |         |
|                                    |      |       |                   | DSCH operation.                  |         |
| Enhanced F-DPCH support            | OP   |       | Enumerated        | The absence of                   | REL-7   |
|                                    |      |       | (True)            | this IE indicates                |         |
|                                    |      |       |                   | that the UE does                 |         |
|                                    |      |       |                   | not support                      |         |
|                                    |      |       |                   | enhanced F-DPCH                  |         |
| HS-PDSCH in CELL_FACH              | OP   |       | Enumerated        | The absence of                   | REL-7   |
|                                    |      |       | (True)            | this IE indicates                |         |
|                                    |      |       |                   | that the UE does                 |         |
|                                    |      |       |                   | not support HS-                  |         |
|                                    |      |       |                   | PDSCH reception                  |         |
|                                    |      |       |                   | in CELL_FACH                     |         |
| HS-PDSCH in CELL_PCH and           | OP   |       | Enumerated        | The absence of                   | REL-7   |
| URA_PCH                            |      |       | (True)            | this IE indicates                |         |
|                                    |      |       |                   | that the UE does                 |         |
|                                    |      |       |                   | not support HS-                  |         |
|                                    |      |       |                   | PDSCH in neither                 |         |
|                                    |      |       |                   | CELL_PCH nor                     |         |
|                                    |      |       |                   | URA_PCH states.                  |         |
| DPCCH Discontinuous                | OP   |       | Enumerated        | The absence of                   | REL-7   |
| Transmission support               |      |       | (True)            | this IE indicates                |         |
|                                    |      |       |                   | that the UE does                 |         |
|                                    |      |       |                   | not support                      |         |
|                                    |      |       |                   | DPCCH                            |         |
|                                    |      |       |                   | Discontinuous                    |         |
| Clat Farment #4 average            | OD   |       | Course a rest and | Transmission                     | DEL 7   |
| Slot Format #4 support             | OP   |       | Enumerated        | The absence of this IE indicates | REL-7   |
|                                    |      |       | (True)            | that the UE does                 |         |
|                                    |      |       |                   | not support Slot                 |         |
|                                    |      |       |                   |                                  |         |
| Support for E. DDCCH Dawar         | OP   |       | Enumerated        | Format #4 The IE shall be set    | REL-7   |
| Support for E-DPCCH Power Boosting | UP   |       | (TRUE)            | to TRUE when E-                  | KEL-/   |
| Boosting                           |      |       | (TRUE)            | DPCCH Power                      |         |
|                                    |      |       |                   | Boosting is fully                |         |
|                                    |      |       |                   | supported by the                 |         |
|                                    |      |       |                   | UE.                              |         |
|                                    |      |       |                   | J 52.                            |         |
|                                    |      |       |                   | Absence of this                  |         |
|                                    |      |       |                   | information                      |         |
|                                    |      |       |                   | element indicates                |         |
|                                    |      |       |                   | that E-DPCCH                     |         |
|                                    |      |       |                   | Power Boosting is                |         |
|                                    |      |       |                   | not fully supported              |         |
| Support of TX Diversity on DL      | OP   |       | Enumerated        | The absence of                   | REL-7   |
| Control Channels by MIMO           | _    |       | (TRUE)            | this IE indicates                |         |
| Capable UE when MIMO               |      |       |                   | that the MIMO                    |         |
| operation is active                |      |       |                   | capable UE does                  |         |
|                                    |      |       |                   | not support TX                   |         |
|                                    |      |       |                   | diversity on DL                  |         |
|                                    | 1    |       |                   | ,                                | 1       |

| Information Element/Group | Need | Multi | Type and  | Semantics          | Version |
|---------------------------|------|-------|-----------|--------------------|---------|
| name                      |      |       | reference | description        |         |
|                           |      |       |           | Control Channels   |         |
|                           |      |       |           | (HS-SCCH, F-       |         |
|                           |      |       |           | DPCH, E-AGCH,      |         |
|                           |      |       |           | E-HICH, E-RGCH)    |         |
|                           |      |       |           | when MIMO is       |         |
|                           |      |       |           | active, P-CPICH is |         |
|                           |      |       |           | configured on      |         |
|                           |      |       |           | antenna 1, and S-  |         |
|                           |      |       |           | CPICH on antenna   |         |
|                           |      |       |           | 2.                 |         |

NOTE 1: This IE corresponds to the HS-DSCH category supported by the UE when MAC-ehs is configured.

## 10.3.3.42a UE radio access capability extension

| Information Element/Group name          | Need | Multi   | Type and reference   | Semantics description   | Version        |
|---|------|---|--|---|----------------|
| Frequency band specific capability list | MP   | 1 to<br><maxfre<br>qbandsF<br/>DD&gt;</maxfre<br> |  | The network should ignore the entry that includes the 'extension indicator'.  |                |
| >Frequency band                         | MP   |   | Enumerat<br>ed(Band<br>I, Band II,   |   |                |
|   |      |   | Band III, Band VI, Band IV, Band V, Band VII, extension indicator)             | The setting of the value 'extension indicatior' by the UE is not specified in the specification.  | REL-5<br>REL-6 |
| >Frequency band 2                       | OP   |   | Enumerat<br>ed(Band<br>VIII, Band<br>IX, Band<br>X,<br>extension<br>Indicator) | This IE indicates the supported frequency bands Band VIII and beyond. The setting of the value 'extension indicatior' by the UE is not specified in the specification. Twelve spare values are needed | REL-6          |
| >RF capability FDD extension            | MD   |   | RF<br>capability<br>FDD<br>extension<br>10.3.3.33<br>a                         | the default values are<br>the same values as in<br>the immediately<br>preceding IE "RF<br>capability FDD<br>extension"; the first<br>occurrence is MP   |                |
| >Measurement capability extension       | MP   |   | Measure<br>ment<br>capability<br>extension<br>10.3.3.21<br>a                   |   |                |

# 10.3.3.42b UE security information

Upon receiving a UE information request from another system, the UE shall indicate the requested security information. The UE security information includes the following RRC information.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description                      |
|--------------------------------|------|-------|--------------------|--|
| UE information elements        |      |       |                    |  |
| START-CS                       | MP   |       | START<br>10.3.3.38 | START values to be used in this CN domain. |

### 10.3.3.42c UE security information2

Upon receiving a UE information request from another system, the UE shall indicate the requested security information. The UE security information includes the following RRC information.

| Information<br>Element/Group name | Need | Multi | Type and reference | Semantics description                      | Version |
|-----------------------------------|------|-------|--------------------|--|---------|
| START-PS                          | MP   |       | START<br>10.3.3.38 | START values to be used in this CN domain. | Rel-6   |

### 10.3.3.43 UE Timers and Constants in connected mode

This information element specifies timer- and constants values used by the UE in connected mode.

| Information<br>Element/Group name | Need | Multi | Type and reference   | Semantics description  | Version |
|-----------------------------------|------|-------|--|--|---------|
| T301                              | MD   |       | Integer(10<br>0, 200<br>2000 by<br>step of<br>200,<br>3000,<br>4000,<br>6000,<br>8000) | Value in milliseconds. Default value is 2000. This IE should not be used by the UE in this release of the protocol. One spare value is needed. |         |
| N301                              | MD   |       | Integer(07)  | Default value is 2. This IE should not be used by the UE in this release of the protocol.  |         |
| T302                              | MD   |       | Integer(10<br>0, 200<br>2000 by<br>step of<br>200,<br>3000,<br>4000,<br>6000,<br>8000) | Value in milliseconds. Default value is 4000. One spare value is needed.   |         |
| N302                              | MD   |       | Integer(0  | Default value is 3.  |         |
| T304                              | MD   |       | Integer(10<br>0, 200,<br>400,<br>1000,<br>2000)  | Value in milliseconds. Default value is 2000. Three spare values are needed.   |         |
| N304                              | MD   |       | Integer(07)  | Default value is 2   |         |
| T305                              | MD   |       | Integer(5,<br>10, 30,<br>60, 120,<br>360, 720,<br>infinity)                            | Value in minutes. Default value is 30. Infinity means no update  |         |
| T307                              | MD   |       | Integer(5,<br>10, 15,<br>20, 30,<br>40, 50)  | Value in seconds. Default value is 30. One spare value is needed.  |         |
| T308                              | MD   |       | Integer(40<br>, 80, 160,   | Value in milliseconds. Default value is 160.   |         |

| Information<br>Element/Group name | Need | Multi | Type and reference  | Semantics description   | Version |
|-----------------------------------|------|-------|---|---|---------|
| •                                 |      |       | 320)  |   |         |
| T309                              | MD   |       | Integer(18)   | Value in seconds. Default value is 5.   |         |
| T310                              | MD   |       | Integer(40<br>320 by<br>step of<br>40)  | Value in milliseconds. Default value is 160.  |         |
| N310                              | MD   |       | Integer(0   | Default value is 4.   |         |
| T311                              | MD   |       | Integer(25<br>0 2000<br>by step of<br>250)  | Value in milliseconds.<br>Default value is 2000.  |         |
| T312                              | MD   |       | Integer<br>(015)  | Value in seconds. Default value is 1. The value 0 is not used in this version of the specification. |         |
| N312                              | MD   |       | Integer (1,<br>2, 4, 10,<br>20, 50,<br>100, 200,<br>400, 600,<br>800,<br>1000)  | Default value is 1.   |         |
| T313                              | MD   |       | Integer<br>(015)  | Value in seconds. Default value is 3.   |         |
| N313                              | MD   |       | Integer (1,<br>2, 4, 10,<br>20, 50,<br>100, 200)  | Default value is 20.  |         |
| T314                              | MD   |       | Integer(0,<br>2, 4, 6, 8,<br>12, 16,<br>20)   | Value in seconds. Default value is 12.  |         |
| T315                              | MD   |       | Integer<br>(0,10, 30,<br>60, 180,<br>600,<br>1200,<br>1800)   | Value in seconds. Default value is 180.   |         |
| N315                              | MD   |       | Integer (1,<br>2, 4, 10,<br>20, 50,<br>100, 200,<br>400, 600,<br>800,<br>1000)  | Default value is 1.   |         |
| T316                              | MD   |       | Integer(0,<br>10, 20,<br>30, 40,<br>50,<br>infinity)  | Value in seconds. Default value is 30. One spare value is needed.                                   |         |
| T317                              | MD   |       | ,   |   |         |
|                                   |      |       | Enumerat<br>ed<br>(infinity,<br>infinity,<br>infinity,<br>infinity,<br>infinity,<br>infinity,<br>infinity,<br>infinity, | Default value is infinity.  All the values are changed to "infinity" in the Rel-5.                  | REL-5   |

## 10.3.3.44 UE Timers and Constants in idle mode

This information element specifies timer- and constant values used by the UE in idle mode.

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description   |
|--------------------------------|------|-------|--|---|
| T300                           | MP   |       | Integer(100,<br>200 2000<br>by step of<br>200, 3000,<br>4000, 6000,<br>8000) | Value in milliseconds. Default value is 1000. Use of Default is described in 10.2.48.8.4 and in 10.2.48.8.16.   |
| N300                           | MP   |       | Integer(07)  | Default value is 3. Use of<br>Default is described in<br>10.2.48.8.4 and in<br>10.2.48.8.16.  |
| T312                           | MP   |       | Integer(0<br>15)   | Value in seconds. Default value is 1. Use of Default is described in 10.2.48.8.4 and in 10.2.48.8.16. The value 0 is not used in this version of the specification. |
| N312                           | MP   |       | Integer (1, 2,<br>4, 10, 20, 50,<br>100, 200,<br>400, 600,<br>800, 1000)     | Default value is 1. Use of<br>Default is described in<br>10.2.48.8.4 and in<br>10.2.48.8.16.  |

# 10.3.3.45 UE positioning capability

| Information<br>Element/Group name                          | Need                           | Multi                                | Type and reference   | Semantics description  | Version |
|--|--------------------------------|--------------------------------------|--|--|---------|
| Standalone location method(s) supported                    | MP                             |                                      | Boolean  | Defines if a UE can<br>measure its location by<br>some means unrelated<br>to UTRAN<br>TRUE means supported                                 |         |
| UE based OTDOA supported                                   | MP                             |                                      | Boolean  | TRUE means supported   |         |
| Network Assisted GPS support                               | MP                             |                                      | Enumerat ed ('Network based', 'UE based', 'Both', 'None')                      | Defines if the UE supports network based or UE based GPS methods.  |         |
| Network Assisted<br>GANSS support List                     | CV-<br>not_iRA<br>T_HoInf<br>o | 1 to<br><maxga<br>NSS&gt;</maxga<br> |  | Absent if GANSS is not supported   | REL-7   |
| >GANSS ID  | OP                             |                                      | Enumerat<br>ed ()  | Absence of this IE means Galileo. Eight spare values needed.   | REL-7   |
| >GANSS mode  | MP                             |                                      | Enumerat<br>ed<br>('Network<br>based',<br>'UE<br>based',<br>'Both',<br>'None') | Defines if the UE<br>supports network based<br>or UE based GANSS<br>methods  | REL-7   |
| >GANSS Signal ID   | OP                             |                                      | 10.3.3.45<br>a   | Absence of this field<br>means Galileo L1 OS if<br>GANSS_ID refers to<br>Galileo.  | REL-7   |
| >Support for GANSS<br>timing of cell frames<br>measurement | MP                             |                                      | Boolean  | Defines if a UE has the capability to perform the UE GANSS timing of cell frames measurement. TRUE means capable                           | REL-7   |
| >Support for GANSS<br>Carrier-Phase<br>Measurement         | OP                             |                                      | Boolean  | Defines if a UE has the capability to perform the UE GANSS Carrier-Phase Measurement. TRUE means capable                                   | REL-7   |
| GANSS support indication                                   | CV-<br>iRAT_H<br>oInfo         |                                      | Enumerat<br>ed (True)  | TRUE indicates that the UE supports GANSS  | REL-7   |
| Support for GPS timing of cell frames measurement          | MP                             |                                      | Boolean  | Defines if a UE has the capability to perform the UE GPS timing of cell frames measurement [7]. TRUE means capable                         |         |
| Support for IPDL   | MP                             |                                      | Boolean  | Defines if a UE has the capability to use IPDL to enhance its 'SFN-SFN observed time difference –type 2' measurement. TRUE means supported |         |
| Support for Rx-Tx time                                     | MP                             |                                      | Boolean  | TRUE means supported   |         |

| difference type2         |        |          |                         |  |
|--------------------------|--------|----------|-------------------------|--|
| measurement              |        |          |                         |  |
| Support for UP assisted  | CV-    | Enumerat |                         |  |
| GPS measurement          | GPSsup | ed       |                         |  |
| validity in CELL_PCH     | ported | (true)   |                         |  |
| and URA_PCH states       |        |          |                         |  |
| Support for SFN-SFN      | OP     | Enumerat | Absence of this element |  |
| observed time difference |        | ed       | means not supported     |  |
| type 2 measurement       |        | (true)   | and presence means      |  |
|                          |        |          | supported.              |  |

| Condition       | Explanation   |
|-----------------|---|
| GPSsupported    | This IE is mandatory present if the IE "Network Assisted GPS support" is set to 'Network based', 'UE based' or 'Both'. Otherwise, it is not needed. |
| not_iRAT_HoInfo | These IEs are not needed in the INTER RAT HANDOVER INFO message. Otherwise, they are optionally present.  |
| iRAT_HoInfo     | This IE is optionally present in the INTER RAT HANDOVER INFO message. Otherwise, the IE is not needed.  |

# 10.3.3.45a GANSS Signal Id

The GANSS Signal ID encodes the identification of the signal for each GANSS. It depends on the GANSS Id.

| Information<br>Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|-----------------------------------|------|-------|--------------------|-----------------------|---------|
| GANSS Signal Identity             | MD   |       | INTEGER            | See NOTE 1            | REL-7   |
| per Signal Id                     |      |       | (07)               |                       |         |

#### NOTE 1:

| GANSS Id          | Value            | Explanation       |
|-------------------|------------------|-------------------|
|                   | Default<br>Value | Galileo L1        |
|                   | 0                | Galileo E5A       |
| Default : Galileo | 1                | Galileo E5B       |
|                   | 2                | Galileo E6        |
|                   | 3                | Galileo E5A + E5B |
|                   | 4-7              | Spare             |

# 10.3.3.46 URA update cause

Indicates the cause for s URA update.

|   | Information Element/Group | Need | Multi | Type and    | Semantics description      |
|---|---------------------------|------|-------|-------------|----------------------------|
| L | name                      |      |       | reference   |                            |
|   | URA update cause          | MP   |       | Enumerated( | One spare value is needed. |
|   |                           |      |       | change of   |                            |
|   |                           |      |       | URA,        |                            |
|   |                           |      |       | periodic    |                            |
| L |                           |      |       | URA update) |                            |

### 10.3.3.47 U-RNTI

The U-RNTI (UTRAN Radio Network Temporary Identity) is allocated to a UE having a RRC connection and identifies the UE within UTRAN.

| Information Element/Group | Need | Multi | Type and                    | Semantics description   |
|---------------------------|------|-------|-----------------------------|---|
| SRNC identity             | MP   |       | reference<br>bit string(12) | The SRNC ID unique in PLMN is encoded to SRNC identity IE in descending order from b31. The b31 is the most significant bit. If the SRNC ID is more than 12 bits as defined in [57], the remaining bits are included as most significant bits of S-RNTI IE.   |
| S-RNTI                    | MP   |       | bit string(20)              | The UE ID unique in SRNS is encoded to the S-RNTI IE in descending order. If the SRNC ID is more than 12 bits as defined in [57], S-RNTI include both part of the SRNC ID and the UE-ID. The least significant bits encode the UE-ID to the S-RNTI IE in descending order. The b0 is the least significant bit. |

### 10.3.3.47a U-RNTI group

The U-RNTI group is used to identify a group of UEs having an RRC connection.

| Information Element/Group name | Need | Multi | Type and reference     | Semantics description   | Version |
|--------------------------------|------|-------|------------------------|---|---------|
| CHOICE group discrimimator     | MP   |       |                        |   | REL-5   |
| >AII                           |      |       |                        | (no data)   | REL-5   |
| >U-RNTI mask                   |      |       |                        |   | REL-5   |
| >>U-RNTI                       | MP   |       | U-RNTI<br>10.3.3.47    | The bits that are less significant than the bit position indicated by the U-RNTI bit mask index shall be ignored. | REL-5   |
| >>U-RNTI bit mask index        | MP   |       | Enumerated(b1, b2,b31) | Values b1 to b31 indicate bit positions in the S-RNTI and in the SRNC identity.                                   | REL-5   |

### 10.3.3.48 U-RNTI Short

The U-RNTI (UTRAN Radio Network Temporary Identity) is allocated to a UE having a RRC connection and identifies the UE within UTRAN.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   |
|--------------------------------|------|-------|--------------------|---|
| SRNC identity                  | MP   |       | bit string(12)     | The SRNC identity bits are numbered b20 to b31, where b20 is the least significant bit. If the SRNC ID is more than 12 bits as defined in [57], the remaining bits are included as most significant bits of S-RNTI 2 IE.  |
| S-RNTI 2                       | MP   |       | bit string(10)     | The UE ID is encoded in S-RNTI 2 in descending order. If the SRNC ID is more than 12 bits as defined in [57], S-RNTI include both part of the SRNC ID and the UE-ID. The least significant bits encode the UE-ID to the S-RNTI IE in descending order. The b0 is the least significant bit. |

# 10.3.3.49 UTRAN DRX cycle length coefficient

A coefficient in the formula to count the paging occasions to be used by a specific UE (specified in [4]).

| Information Element/Group name | Need | Multi | Type and reference                                    | Semantics description   | Version |
|--------------------------------|------|-------|---|---|---------|
| DRX cycle length coefficient   | MP   |       | Integer(39)   | Refers to 'k' in the formula as specified in [4], Discontinuous reception   |         |
| DRX cycle length coefficient 2 | MD   |       | Integer(39)   | Refers to 'k' in the formula as specified in [4], Discontinuous reception. The default value is "same as DRX cycle length coefficient". | REL-7   |
| Time for DRX cycle 2           | MD   |       | Integer(80,<br>160, 320, 640,<br>1280, 2560,<br>5120) | Values in milliseconds. The default value is 0 ms.  | REL-7   |

### 10.3.3.50 Wait time

Wait time defines the time period the UE has to wait before repeating the rejected procedure.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description                           |
|--------------------------------|------|-------|--------------------|---|
| Wait time                      | MP   |       | Integer(0<br>15)   | Wait time in seconds The value 0 indicates that |
|                                |      |       |                    | repetition is not allowed.                      |

# 10.3.3.51 UE Specific Behaviour Information 1 idle

This IE indicates the UE conformance typically for RRC connection establishment from idle mode.

| Information Element/Group name | Need | Multi | Type and<br>Reference | Semantics description |
|--------------------------------|------|-------|-----------------------|-----------------------|
| UE Specific Behaviour          | MP   |       | bit string(4)         |                       |
| Information 1 idle             |      |       |                       |                       |

## 10.3.3.52 UE Specific Behaviour Information 1 interRAT

This IE indicates the UE conformance typically for RRC connection establishment from another RAT.

| Information Element/Group name                  | Need | Multi | Type and<br>Reference | Semantics description |
|---|------|-------|-----------------------|-----------------------|
| UE Specific Behaviour<br>Information 1 interRAT | MP   |       | bit string(8)         |                       |

### 10.3.4 Radio Bearer Information elements

#### 10.3.4.oa Common RB mapping info

NOTE: For FDD only.

A multiplexing option between a logical channel and a MAC-ehs queue.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| Logical channel identity       | MP   |       | Integer(115)       | Note                  | REL-7   |
| MAC-ehs queue identity         | MP   |       | MAC-ehs            |                       | REL-7   |
|                                |      |       | Queue Id           |                       |         |
|                                |      |       | 10.3.5.7f          |                       |         |

NOTE: the IE "Logical channel identity" conveys the value to be used in the "LCH-ID" field of the MAC-ehs header [15] associated with the MAC-ehs reordering queue identified by the IE "MAC-ehs queue identity".

# 10.3.4.0 Default configuration identity

This information element identifies a default radio parameter configuration. The corresponding default configurations are specified in subclause 13.7.

| Information Element/Group      | Need | Multi | Type and    | Semantics          | Version |
|--------------------------------|------|-------|-------------|--------------------|---------|
| name                           |      |       | reference   | description        |         |
| Default configuration identity | MP   |       | Integer     |                    |         |
|                                |      |       | (010,       |                    |         |
|                                |      |       | 11,         |                    | REL-4   |
|                                |      |       | 13,         | Default            | REL-5   |
|                                |      |       |             | configuration ID 2 |         |
|                                |      |       |             | is not used.       |         |
|                                |      |       | 12, 14, 15, |                    | REL-6   |
|                                |      |       | 16          |                    |         |
|                                |      |       | 17,         | Used only in RRC   | REL-6   |
|                                |      |       |             | Connection Setup   |         |
|                                |      |       |             | message.           |         |
|                                |      |       | 1822,       |                    | REL-6   |
|                                |      |       | 2331)       | Reserved for       | REL-6   |
|                                |      |       |             | future extension   |         |

### 10.3.4.1 Downlink RLC STATUS info

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description                     |
|--------------------------------|------|-------|--|---|
| Timer_Status_Prohibit          | OP   |       | Integer(105<br>50 by step of<br>10,<br>5501000 by<br>step of 50) | Minimum time in ms between STATUS reports |

| Information Element/Group | Need | Multi | Type and  | Semantics description   |
|---------------------------|------|-------|---|---|
| name                      |      |       | reference   |   |
| Missing PDU Indicator     | MP   |       | Boolean   | Value true indicates that UE<br>should send a STATUS report<br>for each missing PDU that is<br>detected |
| Timer_STATUS_periodic     | OP   |       | Integer(100,<br>200, 300,<br>400, 500,<br>750, 1000,<br>2000) | Time in milliseconds  |

## 10.3.4.1a PDCP context relocation info

This information element indicates that the header compression context relocation is to be performed during SRNS relocation for the given radio bearer.

| Information Element/Group name                  | Need | Multi | Type and reference       | Semantics description   | Version |
|---|------|-------|--------------------------|---|---------|
| RB identity                                     | MP   |       | RB identity<br>10.3.4.16 |   | REL-5   |
| Downlink RFC 3095 context relocation indication | MP   |       | Boolean                  | TRUE means RFC 3095 context relocation is performed in downlink | REL-5   |
| Uplink RFC 3095 context relocation indication   | MP   |       | Boolean                  | TRUE means RFC 3095 context relocation is performed in uplink   | REL-5   |

### 10.3.4.2 PDCP info

The purpose of the PDCP info IE is to indicate which algorithms shall be established and to configure the parameters of each of the algorithms.

| Information Element/Group      | Need            | Multi  | Type and          | Semantics                         | Versio |
|--------------------------------|-----------------|--|-------------------|-----------------------------------|--------|
| name                           |                 |  | reference         | description                       | n      |
| Support for lossless SRNS      | CV-             |  | Boolean           | TRUE means                        |        |
| relocation or for lossless DL  | LosslessCr      |  |                   | support                           |        |
| RLC PDU size change            | iteria          |  | /                 |                                   |        |
| Max PDCP SN window size        | CV-<br>Lossless |  | Enumerated(s      | Maximum PDCP                      |        |
|                                | LUSSIESS        |  | n255,<br>sn65535) | sequence number window size. The  |        |
|                                |                 |  | 01100000)         | handling of                       |        |
|                                |                 |  |                   | sequence number                   |        |
|                                |                 |  |                   | when the Max                      |        |
|                                |                 |  |                   | PDCP SN window                    |        |
|                                |                 |  |                   | size is 255 is                    |        |
| PDCP PDU header                | MP              |  | Enumerated        | specified in [23]. Whether a PDCP |        |
| FDCF FD0 fleader               | IVIF            |  | (present,         | PDU header is                     |        |
|                                |                 |  | absent)           | existent or not.                  |        |
| Header compression information | OP              | 1 to   |                   |                                   |        |
|                                |                 | <maxpdc< td=""><td></td><td></td><td></td></maxpdc<> |                   |                                   |        |
|                                |                 | PAlgoTyp   |                   |                                   |        |
| 0110105 / 3//                  | MD              | e>   |                   | N. d.                             |        |
| >CHOICE algorithm type         | MP              |  |                   | Note 1                            |        |
| >>RFC 2507                     |                 |  |                   | Header                            |        |
|                                |                 |  |                   | compression                       |        |
|                                |                 |  |                   | according to IETF                 |        |
|                                |                 |  |                   | standard RFC                      |        |
|                                |                 |  |                   | 2507                              |        |

| Information Element/Group name | Need | Multi   | Type and reference  | Semantics description  | Versio<br>n |
|--------------------------------|------|---|---|--|-------------|
| >>>F_MAX_PERIOD                | MD   |   | Integer<br>(165535)   | Largest number of compressed non-TCP headers that may be sent without sending a full header. Default value is 256.                     |             |
| >>>F_MAX_TIME                  | MD   |   | Integer<br>(1255)   | Compressed headers may not be sent more than F_MAX_TIME seconds after sending last full header. Default value is 5.                    |             |
| >>>MAX_HEADER                  | MD   |   | Integer<br>(6065535)  | The largest header size in octets that may be compressed. Default value is 168.  |             |
| >>>TCP_SPACE                   | MD   |   | Integer<br>(3255)   | Maximum CID value for TCP connections. Default value is 15.  |             |
| >>>NON_TCP_SPACE               | MD   |   | Integer<br>(365535)   | Maximum CID value for non-TCP connections. Default value is 15.  |             |
| >>>EXPECT_REORDERING           | MD   |   | Enumerated<br>(reordering<br>not expected,<br>reordering<br>expected) | Whether the algorithm shall reorder PDCP SDUs or not. Default value is "reordering not expected".                                      |             |
| >>RFC 3095                     |      |   |   | Header<br>compression<br>according to IETF<br>standard RFC<br>3095   | REL-4       |
| >>>Profiles                    | MP   | 1 to<br><maxro<br>HC-<br/>Profiles&gt;</maxro<br> |   | Profiles supported<br>by both<br>compressor and<br>decompressor in<br>both UE and<br>UTRAN. Profile 0<br>shall always be<br>supported. | REL-4       |
| >>>>Profile instance           | MP   |   | Integer(1 3)  | 1 = 0x0001, 2 =<br>0x0002, 3 =<br>0x0003 (see [52])  | REL-4       |
| >>>Uplink                      | OP   |   |   | Indicates the necessary information elements for Uplink.   | REL-4       |
| >>>>Max_CID                    | MD   |   | Integer (1<br>16383)  | Highest context ID number to be used by the UE compressor. Default value is 15.  | REL-4       |

| Information Element/Group      | Need | Multi | Type and   | Semantics                     | Versio |
|--------------------------------|------|-------|------------|-------------------------------|--------|
| name                           |      |       | reference  | description                   | n      |
| >>>Downlink                    | OP   |       |            | Indicates the                 | REL-4  |
|                                |      |       |            | necessary<br>information      |        |
|                                |      |       |            | elements for                  |        |
|                                |      |       |            | Downlink.                     |        |
| >>>Max_CID                     | MD   |       | Integer (1 | Highest context ID            | REL-4  |
|                                |      |       | 16383)     | number to be                  |        |
|                                |      |       |            | used by the UE                |        |
|                                |      |       |            | decompressor.                 |        |
|                                |      |       |            | Default value is              |        |
|                                |      |       |            | 15.                           |        |
| >>>Reverse_Decompression_      | MD   |       | Integer    | Determines                    | REL-4  |
| Depth                          |      |       | (065535)   | whether reverse               |        |
|                                |      |       |            | decompression                 |        |
|                                |      |       |            | should be used or not and the |        |
|                                |      |       |            | maximum number                |        |
|                                |      |       |            | of packets that               |        |
|                                |      |       |            | can be reverse                |        |
|                                |      |       |            | decompressed by               |        |
|                                |      |       |            | the UE                        |        |
|                                |      |       |            | decompressor.                 |        |
|                                |      |       |            | Default value is 0            |        |
|                                |      |       |            | (reverse                      |        |
|                                |      |       |            | decompression                 |        |
| Note 1: If several accurrences | - (  |       |            | shall not be used).           |        |

Note 1: If several occurrences of the same algorithm type are included in the same IE "header compression information", the UE behaviour is unspecified.

| Condition        | Explanation   |  |  |
|------------------|---|--|--|
| LosslessCriteria | This IE is mandatory present if the IE "RLC mode" is "Acknowledged", the IE "In-sequence delivery " is TRUE and the IE "SDU Discard Mode" is "No discard" and not needed otherwise. |  |  |
| Lossless         | This IE is mandatory present if the IE "Support for lossless SRNS relocation or for lossless RLC PDU size change" Is TRUE, otherwise it is not needed.                              |  |  |

# 10.3.4.2a PDCP ROHC target mode

| Information Element/Group name | Need | Multi | Type and<br>Reference              | Semantics description  | Version |
|--------------------------------|------|-------|------------------------------------|--|---------|
| Target Mode                    | MP   |       | Enumerated<br>(O-mode, R-<br>mode) | The UE shall only transit to the signalled mode for operation of ROHC as decribed in [36]. | REL-5   |

## 10.3.4.3 PDCP SN info

| Information Element/Group    | Need | Multi | Type and            | Semantics description   |
|------------------------------|------|-------|---------------------|---|
| name                         |      |       | Reference           |   |
| Receive PDCP sequence number | MP   |       | Integer(065<br>535) | The PDCP sequence number, which the sender of the message is expecting next to be received. |

## 10.3.4.4 Polling info

| Information Element/Group    | Need | Multi | Type and   | Semantics description   |
|------------------------------|------|-------|--|---|
| name                         |      |       | reference  |   |
| Timer_poll_prohibit          | OP   |       | Integer(105<br>50 by step of<br>10,<br>6001000 by<br>step of 50) | Minimum time between polls in ms                                      |
| Timer_poll                   | OP   |       | Integer(105<br>50 by step of<br>10,<br>6001000 by<br>step of 50) | Time in ms.   |
| Poll_PDU                     | OP   |       | Integer(1,2,4<br>,8,16,32,64,1<br>28)                            | Number of PDUs, interval between pollings                             |
| Poll_SDU                     | OP   |       | Integer(1,4,1<br>6,64)   | Number of SDUs, interval between pollings                             |
| Last transmission PDU poll   | MP   |       | Boolean  | TRUE indicates that poll is made at last PDU in transmission buffer   |
| Last retransmission PDU poll | MP   |       | Boolean  | TRUE indicates that poll is made at last PDU in retransmission buffer |
| Poll_Window                  | OP   |       | Integer(50,6<br>0,70,80,85,9<br>0,95,99)                         | Percentage of transmission window, threshold for polling              |
| Timer_poll_periodic          | OP   |       | Integer(100,<br>200, 300,<br>400, 500,<br>750, 1000,<br>2000)    | Time in milliseconds Timer for periodic polling.                      |

### 10.3.4.5 Predefined configuration identity

This information element identifies a pre- defined radio parameter configuration.

| Information Element/Group      | Need | Multi | Type and  | Semantics description |
|--------------------------------|------|-------|-----------|-----------------------|
| name                           |      |       | reference |                       |
| Predefined radio configuration | MP   |       | Integer   |                       |
| identity                       |      |       | (015)     |                       |

# 10.3.4.5a Predefined configuration status information

Another system may provide the UE with one or more predefined UTRAN configurations, comprising of radio bearer, transport channel and physical channel parameters. If requested, the UE shall indicate the configurations it has stored. The predefined configuration status information should include the following RRC information.

| Information Element/Group           | Need | Multi                        | Type and                                    | Semantics description   |
|-------------------------------------|------|------------------------------|---|---|
| name                                |      |                              | reference                                   |   |
| RB information elements             |      |                              |   |   |
| Predefined configurations           |      | maxPredef<br>ConfigCou<br>nt |   | The list is in order of preconfiguration identity                               |
| >Predefined configuration value tag | OP   |                              | Predefined configuration value tag 10.3.4.6 | The UE shall include the value tag if it has stored the concerned configuration |

| Multi Bound          | Explanation                                 |  |  |  |
|----------------------|---|--|--|--|
| MaxPredefConfigCount | Maximum number of predefined configurations |  |  |  |

## 10.3.4.5b Predefined configuration status information compressed

Another system may provide the UE with one or more predefined UTRAN configurations, comprising of radio bearer, transport channel and physical channel parameters. If requested, the UE shall indicate the configurations it has stored. The compressed predefined configuration status information should include the following RRC information.

| Information<br>Element/Group name                              | Need | Multi                                    | Type and reference                           | Semantics description   | Version |
|--|------|--|--|---|---------|
| Sets with different value tags                                 | MP   |  | 10.0.0.0                                     |   | REL-5   |
| >Pre-defined<br>configuration set with<br>different value tags | MP   | 12                                       |  |   | REL-5   |
| >>Start position   | MD   |  | INTEGER<br>(010)                             | Default value is 0, corresponding with the first predefined configuration. The pre-defined configuration where the consecutive sequence of pre-defined configurations begins.   | REL-5   |
| >>Pre-defined configuration value tag list                     | MP   | 6 <max<br>PredefC<br/>onfig&gt;</max<br> | Pre-defined configuration value tag 10.3.4.6 | Value Tags for each pre-defined configuration starting from the lowest.   | REL-5   |
| Other Entries  | OP   |  |  |   | REL-5   |
| >Pre-defined configuration list with variable size             | MP   | 1 <max<br>PredefC<br/>onfig&gt;</max<br> |  | List of other pre-defined configurations not included within the Sets with different value tags, in consecutive order starting with the lowest. If there are stored pre-defined configurations positioned after a pre-defined configuration that is not stored, the UE shall indicate the not-stored pre-defined configuration by explicitly indicating it to be absent. If there are no stored pre-defined configurations positioned after a pre-defined configurations positioned after a pre-defined configuration that is not stored, then the UE may totally omit these pre-defined configurations from the IE, i.e. reduce the size of the list to correspond to the last position that contained a stored pre-defined configuration. | REL-5   |
| >>Predefined configuration value tag                           | OP   |  | Predefined configuration value tag 10.3.4.6  | The UE shall include the value tag if it has stored the concerned configuration   | REL-5   |

## 10.3.4.6 Predefined configuration value tag

This information element is used to identify different versions of a radio bearer configuration as may be used within one PLMN e.g. to support different UTRAN implementations.

| Information Element/Group      | Need | Multi | Type and    | Semantics description |
|--------------------------------|------|-------|-------------|-----------------------|
| name                           |      |       | Reference   |                       |
| Predefined configuration value | MP   |       | Integer(015 |                       |
| tag                            |      |       | )           |                       |

## 10.3.4.7 Predefined RB configuration

This information element concerns a pre-defined configuration of radio bearer parameters

| Information Element/Group name          | Need | Multi                                     | Type and<br>Reference                                    | Semantics description            |
|---|------|---|--|----------------------------------|
| UE information elements                 |      |   |  |                                  |
| Re-establishment timer                  | MP   |   | Re-<br>establishme<br>nt timer<br>10.3.3.30              | Only one RAB supported           |
| Signalling radio bearer information     |      |   |  |                                  |
| Signalling RB information to setup List | MP   | 1 to<br><maxsrbs<br>etup&gt;</maxsrbs<br> |  | For each signalling radio bearer |
| >Signalling RB information to setup     | MP   |   | Signalling<br>RB<br>information<br>to setup<br>10.3.4.24 |                                  |
| RB information                          |      |   |  | Only one RAB supported           |
| RB information to setup list            | MP   | 1 to<br><maxrbpe<br>rRAB&gt;</maxrbpe<br> |  |                                  |
| >RB information to setup                | MP   |   | RB<br>information<br>to setup<br>10.3.4.20               |                                  |

#### 10.3.4.8 RAB info

This IE contains information used to uniquely identify a radio access bearer.

| Information Element/Group name | Need           | Multi | Type and reference                                | Semantics description  | Version |
|--------------------------------|----------------|-------|---|--|---------|
| RAB identity                   | MP             |       | RAB identity<br>10.3.1.14                         |  |         |
| MBMS Service Identity          | CV-<br>Message |       | MBMS<br>service ID<br>10.3.9a.8a                  | Included when establishing a<br>RB for a MBMS service of the<br>broadcast type; NOTE 1 | REL-6   |
| MBMS Session identity          | CV-<br>Message |       | MBMS<br>Session<br>identity<br>10.3.9a.9          |  | REL-6   |
| CN domain identity             | MP             |       | CN domain identity 10.3.1.1                       |  |         |
| NAS Synchronization Indicator  | OP             |       | NAS<br>Synchronizat<br>ion indicator<br>10.3.4.12 |  |         |
| Re-establishment timer         | MP             |       | Re-<br>establishme<br>nt timer<br>10.3.3.30       |  |         |

NOTE 1: Only the "MBMS Service ID" part of the MBMS service identity is signalled in this IE. The UE should consider that the "PLMN identity" part of the MBMS service identity equals the PLMN identity of an MBMS service with the same "MBMS Service ID" stored in the variable ACTIVATED\_MBMS\_SERVICES. If there is no such MBMS service or more than one such MBMS service, the UE behaviour is unspecified.

| Condition | Explanation  |
|-----------|--|
| Message   | This IE is optionally present in the RADIO BEARER SETUP and the SRNS RELOCATION INFO |
|           | messages and not needed otherwise.   |

### 10.3.4.9 RAB info Post

This IE contains information used to uniquely identify a radio access bearer.

| Information Element/Group name | Need | Multi | Type and reference                                | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| RAB identity                   | MP   |       | RAB identity<br>10.3.1.14                         |                       |
| CN domain identity             | MP   |       | CN domain identity 10.3.1.1                       |                       |
| NAS Synchronization Indicator  | OP   |       | NAS<br>Synchronizat<br>ion indicator<br>10.3.4.12 |                       |

# 10.3.4.9a RAB information for MBMS ptp bearers

| Information Element/Group name | Need | Multi | Type and reference                       | Semantics description   | Version |
|--------------------------------|------|-------|--|---|---------|
| RB identity                    | MP   |       | RB identity<br>10.3.4.16                 |   | REL-7   |
| MBMS Service Identity          | MP   |       | MBMS<br>Service ID<br>10.3.9a.8a         | Indicates that this radio bearer is used for a different MBMS service.                | REL-7   |
| MBMS Session Identity          | OP   |       | MBMS<br>Session<br>identity<br>10.3.9a.9 | Indicates that this radio bearer is used for a different session of the MBMS service. | REL-7   |

# 10.3.4.10 RAB information for setup

| Information Element/Group name | Need | Multi                                     | Type and reference                | Semantics description |
|--------------------------------|------|---|-----------------------------------|-----------------------|
| RAB info                       | MP   |   | RAB info<br>10.3.4.8              |                       |
| RB information to setup list   | MP   | 1 to<br><maxrbpe<br>rRAB&gt;</maxrbpe<br> |                                   |                       |
| >RB information to setup       | MP   |   | RB information to setup 10.3.4.20 |                       |

# 10.3.4.11 RAB information to reconfigure

| Information Element/Group | Need | Multi | Type and     | Semantics description |
|---------------------------|------|-------|--------------|-----------------------|
| name                      |      |       | reference    |                       |
| RAB identity              | MP   |       | RAB Identity |                       |
|                           |      |       | 10.3.1.14    |                       |
| CN domain identity        | MP   |       | CN domain    |                       |

| Information Element/Group     | Need | Multi | Type and     | Semantics description |
|-------------------------------|------|-------|--------------|-----------------------|
| name                          |      |       | reference    |                       |
|                               |      |       | identity     |                       |
|                               |      |       | 10.3.1.1     |                       |
| NAS synchronization indicator | MP   |       | NAS          | Note 1                |
|                               |      |       | Synchronizat |                       |
|                               |      |       | ion info     |                       |
|                               |      |       | 10.3.4.12    |                       |

NOTE 1: This IE is only relevant for the CS domain.

## 10.3.4.12 NAS Synchronization indicator

A container for non-access stratum information to be transferred transparently through UTRAN.

| Information Element/Group     | Need | Multi | Type and      | Semantics description  |
|-------------------------------|------|-------|---------------|--|
| name                          |      |       | reference     |  |
| NAS Synchronization indicator | MP   |       | Bit string(4) | The first/leftmost bit of the bit string contains the most significant bit of the NAS Synchronization indicator. |

#### 10.3.4.13 RB activation time info

This IE contains the time, in terms of RLC sequence numbers, when a certain configuration shall be activated, for a number of radio bearers.

| Information Element/Group name | Need | Multi           | Type and reference | Semantics description                          |
|--------------------------------|------|-----------------|--------------------|--|
| Radio bearer activation time   | MP   | 1 to            |                    |  |
|                                |      | <maxrb></maxrb> |                    |  |
| >RB identity                   | MP   |                 | RB identity        |  |
|                                |      |                 | 10.3.4.16          |  |
| >RLC sequence number           | MP   |                 | Integer (0         | RLC SN [16] .                                  |
| ·                              |      |                 | 4095)              | Used for radio bearers mapped on RLC AM and UM |

### 10.3.4.14 RB COUNT-C MSB information

The MSB of the COUNT-C values of the radio bearer.

| Information Element/Group | Needed | Multi | Type and    | Semantics description |
|---------------------------|--------|-------|-------------|-----------------------|
| name                      |        |       | reference   |                       |
| RB identity               | MP     |       | RB identity |                       |
| -                         |        |       | 10.3.4.16   |                       |
| COUNT-C-MSB-uplink        | MP     |       | Integer (0  | 25 MSBs from COUNT-C  |
|                           |        |       | 2^25-1)     | associated to this RB |
| COUNT-C-MSB-downlink      | MP     |       | Integer (0  | 25 MSBs from COUNT-C  |
|                           |        |       | 2^25-1)     | associated to this RB |

### 10.3.4.15 RB COUNT-C information

The COUNT-C values of the radio bearer.

| Information Element/Group | Needed | Multi | Type and    | Semantics description |
|---------------------------|--------|-------|-------------|-----------------------|
| name                      |        |       | reference   |                       |
| RB identity               | MP     |       | RB identity |                       |
| -                         |        |       | 10.3.4.16   |                       |
| COUNT-C-uplink            | MP     |       | Integer (0  |                       |
| ·                         |        |       | 2^32-1)     |                       |
| COUNT-C-downlink          | MP     |       | Integer (0  |                       |
|                           |        |       | 2^32-1)     |                       |

# 10.3.4.16 RB identity

An identification number for the radio bearer affected by a certain message.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| RB identity                    | MP   |       | Integer(132        | Values 1-4 shall only be used for signalling radio bearers. The IE value minus one shall be used as BEARER in the ciphering algorithm. |

### 10.3.4.17 RB information to be affected

| Information Element/Group name | Need | Multi | Type and reference        | Semantics description |
|--------------------------------|------|-------|---------------------------|-----------------------|
| RB identity                    | MP   |       | RB identity<br>10.3.4.16  |                       |
| RB mapping info                | MP   |       | RB mapping info 10.3.4.21 |                       |

# 10.3.4.18 RB information to reconfigure

| Information Element/Group name | Need | Multi | Type and reference                | Semantics description   |
|--------------------------------|------|-------|-----------------------------------|---|
| RB identity                    | MP   |       | RB identity<br>10.3.4.16          |   |
| PDCP info                      | OP   |       | PDCP info<br>10.3.4.2             |   |
| PDCP SN info                   | OP   |       | PDCP SN<br>info<br>10.3.4.3       | PDCP sequence number info from the network. Present only in case of lossless SRNS relocation. |
| RLC info                       | OP   |       | RLC info<br>10.3.4.23             |   |
| RB mapping info                | OP   |       | RB mapping info 10.3.4.21         |   |
| RB stop/continue               | OP   |       | Enumerated(<br>stop,<br>continue) |   |

## 10.3.4.19 RB information to release

| Information Element/Group name | Need | Multi | Type and reference       | Semantics description |
|--------------------------------|------|-------|--------------------------|-----------------------|
| RB identity                    | MP   |       | RB identity<br>10.3.4.16 |                       |

# 10.3.4.20 RB information to setup

| Information Element/Group name | Need | Multi | Type and reference | Semantics description           |
|--------------------------------|------|-------|--------------------|---------------------------------|
| RB identity                    | MP   |       | RB identity        |                                 |
|                                |      |       | 10.3.4.16          |                                 |
| PDCP info                      | OP   |       | PDCP info          |                                 |
|                                |      |       | 10.3.4.2           |                                 |
| CHOICE RLC info type           | MP   |       |                    |                                 |
| >RLC info                      |      |       | RLC info           |                                 |
|                                |      |       | 10.3.4.23          |                                 |
| >Same as RB                    |      |       | RB identity        | Identity of RB with exactly the |
|                                |      |       | 10.3.4.16          | same RLC info IE values         |
| RB mapping info                | MP   |       | RB mapping         |                                 |
|                                |      |       | info               |                                 |
|                                |      |       | 10.3.4.21          |                                 |

NOTE: This information element is included within IE "Predefined RB configuration".

# 10.3.4.21 RB mapping info

A multiplexing option for each possible transport channel MAC-d flow or E-DCH MAC-d flow this RB can be multiplexed on.

| Information Element/Group name                       | Need                             | Multi  | Type and reference                            | Semantics description   | Version |
|--|----------------------------------|--|---|---|---------|
| Information for each multiplexing option             | MP                               | 1 to<br><maxrbm<br>uxOptions&gt;</maxrbm<br> |   |   |         |
| >RLC logical channel mapping indicator               | CV-UL-<br>RLCLogica<br>IChannels |  | Boolean                                       | TRUE indicates that the first logical channel shall be used for data PDUs and the second logical channel shall be used for control PDUs. FALSE indicates that control and data PDUs can be sent on either of the two logical channels. This parameter is not used in this release and shall be set to TRUE. |         |
| >Number of uplink RLC logical channels               | CV-UL-<br>RLC info               | 1 to<br>MaxLoCHp<br>erRLC                    |   | 1 or 2 logical<br>channels per RLC<br>entity or radio<br>bearer<br>RLC [16]   |         |
| >>CHOICE Uplink transport channel type               |                                  |  |   |   | REL-6   |
| >>>DCH, RACH, USCH >>>>Uplink transport channel type | MP                               |  | Enumerated(<br>DCH,RACH,<br>USCH              | USCH is TDD only  | REL-6   |
| >>>ULTransport channel identity                      | CV-UL-<br>DCH/USC<br>H           |  | Transport<br>channel<br>identity<br>10.3.5.18 | This is the ID of a DCH or USCH (TDD only) that this RB could be mapped onto.   |         |
| >>>Logical channel identity                          | OP                               |  | Integer(115                                   | This parameter is used to   |         |

| Information Element/Group name | Need | Multi   | Type and reference                           | Semantics description   | Version |
|--------------------------------|------|---|--|---|---------|
|                                |      |   |  | distinguish logical<br>channels<br>multiplexed by<br>MAC on a<br>transport channel.   |         |
| >>>>CHOICE RLC size list       | MP   |   |  | The RLC sizes that are allowed for this logical channel.  |         |
| >>>>AII                        |      |   | Null   | All RLC sizes<br>listed in the<br>Transport Format<br>Set. 10.3.5.23  |         |
| >>>>Configured                 |      |   | Null   | The RLC sizes configured for this logical channel in the <i>Transport Format Set</i> . 10.3.5.23 if present in this message or in the previously stored configuration otherwise |         |
| >>>>Explicit List              |      | 1 to<br><maxtf></maxtf>                               |  | Lists the RLC sizes that are valid for the logical channel.   |         |
| >>>>RLC size index             | MP   |   | Integer(1m<br>axTF)                          | The integer number is a reference to the <i>RLC size</i> which arrived at that position in the <i>Transport Format Set</i> 10.3.5.23  |         |
| >>>E-DCH                       |      |   |  | Note 4  | REL-6   |
| >>>Logical channel identity    | MP   |   | Integer(115<br>)                             | This parameter is used to distinguish logical channels multiplexed by MAC on a transport channel  | REL-6   |
| >>>E-DCH MAC-d flow identity   | MP   |   | E-DCH<br>MAC-d flow<br>identity<br>10.3.5.7e |   | REL-6   |
| >>>>DDI                        | MP   |   | Integer<br>(062)                             | If more than 1 UL RLC PDU size is configured for this RB, the different sizes will use subsequent DDI values starting from this DDI value. Value "0x3F" is reserved             | REL-6   |
| >>>>RLC PDU size list          | MP   | 1 to<br><maxrlc<br>PDUsizeP<br/>erLogChan</maxrlc<br> |  |   | REL-6   |
| >>>>RLC PDU size               | MP   | >   | Integer(165<br>000 by step                   | Unit is bits  | REL-6   |

| Information Element/Group name            | Need               | Multi                     | Type and reference   | Semantics description  | Version |
|---|--------------------|---------------------------|--|--|---------|
| >>>Include in Scheduling Info             | MP                 |                           | of 8)<br>Boolean   | Indicates whether or not this logical channel is to be considered when performing scheduling info reporting, as per [15]   | REL-6   |
| >>MAC logical channel priority            | MP                 |                           | Integer(18)  | This is priority<br>between a user's<br>different RBs (or<br>logical channels).<br>[15]  |         |
| >Downlink RLC logical channel info        | CV-DL-<br>RLC info |                           |  |  |         |
| >>Number of downlink RLC logical channels | MD                 | 1 to<br>MaxLoCHp<br>erRLC |  | 1 or 2 logical channels per RLC entity or radio bearer RLC [16] Default value is that parameter values for DL are exactly the same as for corresponding UL logical channel. In case two multiplexing options are specified for the UL, the first options shall be used as default for the DL. As regards to the IE "Channel type", rule is specified in 8.6.4.8. |         |
| >>>Downlink transport channel type        | MP                 |                           | Enumerated(<br>DCH,FACH,<br>DSCH,DCH+<br>DSCH<br>, HS-DSCH,<br>DCH + HS- | Note 4   | REL-5   |
| >>>DL DCH Transport channel identity      | CV-DL-<br>DCH      |                           | DSCH) Transport channel identity 10.3.5.18                               |  |         |
| >>>DL DSCH Transport channel identity     | CV-DL-<br>DSCH     |                           | Transport<br>channel<br>identity<br>10.3.5.18                            |  |         |
| >>>CHOICE DL MAC header type              | CV-DL-HS-<br>DSCH  |                           | -  | Depending on the MAC-hs/ehs type of header selected for HS-DSCH  | REL-7   |
| >>>MAC-hs                                 |                    |                           |  |  | REL-7   |

| Informa            | ation Element/Group<br>name   | Need                                       | Need Multi Type and reference |                                  | Semantics description | Version |
|--------------------|---|--|-------------------------------|----------------------------------|-----------------------|---------|
| >>>>DL<br>identity | . HS-DSCH MAC-d flow  | AC-d flow MP MAC-d flow identity 10.3.5.7c |                               |                                  | REL-5                 |         |
| >>>>MAC            | C-ehs   |  |                               | 10.0.0.10                        |                       | REL-7   |
| >>>>DL<br>Queue Id | HS-DSCH MAC-ehs   | MP   |                               | MAC-ehs<br>Queue Id<br>10.3.5.7f | Note 5                | REL-7   |
| >>>Logic           | al channel identity   | OP Integer(115 16 is reserved Note 5       |                               |                                  |                       |         |
| Note 3:            | Note 3: The IE "Downlink transport channel type" values " DSCH" and "DCH+DSCH " should not be used for FDD. If received the UE behaviour is unspecified.  |  |                               |                                  |                       |         |
| Note 4:            | Note 4: If included in System Information Block Type 16, the values 'HS-DSCH' and 'DCH + HS-DSCH' do not apply for the IE "Downlink transport channel type". Furthermore, if included in System Information Block Type 16, the value "E-DCH" for the IE "Uplink transport channel type" does not apply. |  |                               |                                  |                       |         |
| Note 5:            |   |  |                               |                                  |                       |         |

| Condition             | Explanation  |
|-----------------------|--|
| UL-RLC info           | If "CHOICE Uplink RLC mode" in the IE "RLC info" that applies for that RB (i.e. either the one stored or received in the same message for the RB for which the "RB mapping info" was received, or the one stored or received in the same message for the RB pointed at in the IE "Same as RB" in the IE "RB information to setup" stored or received in the same message) is present this IE is mandatory present. Otherwise the IE                                  |
| DL-RLC info           | is not needed.  If "CHOICE Downlink RLC mode" in the IE "RLC info" that applies for that RB (i.e. either the one stored or received in the same message for the RB for which the "RB mapping info" was received, or the one stored or received in the same message for the RB pointed at in the IE "Same as RB" in the IE "RB information to setup" stored or received in the same message) is present this IE is mandatory present. Otherwise the IE is not needed. |
| UL-RLCLogicalChannels | If "Number of uplink RLC logical channels" in IE "RB mapping info" is 2, then this IE is mandatory present. Otherwise this IE is not needed.   |
| UL-DCH/USCH           | If IE "Uplink transport channel type" is equal to "DCH" or "USCH" (TDD only) this IE is mandatory present. Otherwise the IE is not needed.   |
| DL-DCH                | If IE "Downlink transport channel type" is equal to "DCH", "DCH+DSCH" or "DCH + HS-DSCH" this IE is mandatory present. Otherwise the IE is not needed.   |
| DL-DSCH               | If IE "Downlink transport channel type" is equal to<br>"DSCH" or "DCH+DSCH" this IE is mandatory<br>present. Otherwise the IE is not needed.   |
| DL-HS-DSCH            | If IE "Downlink transport channel type" is equal to<br>"HS-DSCH" or "DCH + HS-DSCH" this IE is<br>mandatory present. Otherwise the IE is not needed.   |

# 10.3.4.22 RB with PDCP information

| Information Element/Group name | Need | Multi | Type and reference       | Semantics description | Version |
|--------------------------------|------|-------|--------------------------|-----------------------|---------|
| RB identity                    | MP   |       | RB identity<br>10.3.4.16 |                       |         |

| PDCP SN info | MP | PDCP SN<br>info 10.3.4.3 | PDCP sequence number info from the sender of the message for lossless SRNS relocation.  |       |
|--------------|----|--------------------------|---|-------|
|              |    |                          | PDCP sequence number info<br>from the sender of the<br>message for lossless SRNS<br>relocation or for lossless DL<br>RLC PDU size change. | REL-5 |

# 10.3.4.23 RLC info

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description  | Version |
|--------------------------------|------|-------|---|--|---------|
| CHOICE Uplink RLC mode         | OP   |       |   | Indicates if Acknowledged,<br>Unacknowledged or<br>Transparent mode RLC shall<br>be used.  |         |
| >AM RLC                        |      |       |   |  |         |
| >>Transmission RLC discard     | MP   |       | Transmissio<br>n RLC<br>discard<br>10.3.4.25  |  |         |
| >>Transmission window size     | MP   |       | Integer(1,8,1<br>6,32,64,128,<br>256,512,768,<br>1024,1536,2<br>047,2560,30<br>72,3584,409<br>5)                | Maximum number of RLC PUs sent without getting them acknowledged. This parameter is needed if acknowledged mode is used. UE shall also assume that the UTRAN receiver window is equal to this value. |         |
| >>Timer_RST                    | MP   |       | Integer(50,<br>100, 150,<br>200, 250,<br>300, 350,<br>400, 450,<br>500, 550,<br>600, 700,<br>800, 900,<br>1000) | Elapsed time in milliseconds. It is used to trigger the retransmission of RESET PDU.   |         |
| >>Max_RST                      | MP   |       | Integer(1, 4, 6, 8, 12 16, 24, 32)  | Defined in [16]  |         |
| >>Polling info                 | OP   |       | Polling info<br>10.3.4.4  |  |         |
| >UM RLC                        |      |       |   |  |         |
| >>Transmission RLC discard     | OP   |       | Transmissio<br>n RLC<br>discard<br>10.3.4.25  |  |         |
| >TM RLC                        |      |       |   |  |         |
| >>Transmission RLC discard     | OP   |       | Transmissio<br>n RLC<br>discard<br>10.3.4.25  |  |         |
| >>Segmentation indication      | MP   |       | Boolean   | TRUE indicates that segmentation is performed.   |         |
| CHOICE Downlink RLC mode       | OP   |       |   | Indicates if Acknowledged,<br>Unacknowledged or<br>Transparent mode RLC shall<br>be used   |         |
| >AM RLC                        |      |       |   |  |         |
| >>CHOICE DL RLC PDU size       | MP   |       |   |  | REL-7   |
| >>>Fixed size                  |      |       |   |  | REL-7   |

| Information Element/Group name    | Need              | Multi           | Type and reference   | Semantics description  | Version |
|-----------------------------------|-------------------|-----------------|--|--|---------|
| >>>>DL RLC PDU size               | MP                |                 | Integer(165<br>000 by step<br>of 8)  | Unit is bits   | REL-5   |
| >>>Flexible size                  |                   |                 | ,  | NOTE 1   | REL-7   |
| >>>Length indicator size          | MP                |                 | Enumerated (7-bit, 15-bit)   |  | REL-7   |
| >>In-sequence delivery            | MP                |                 | Boolean  | TRUE indicates that RLC shall preserve the order of higher layer PDUs when these are delivered. FALSE indicates that receiving RLC entity could allow SDUs to be delivered to the higher layer in different order than submitted to RLC sublayer at the transmitting side. |         |
| >>Receiving window size           | MP                |                 | Integer(1,8,1<br>6,32,64,128,<br>256,512,768,<br>1024,1536,2<br>047,2560,30<br>72,3584,409<br>5) | Maximum number of RLC PUs allowed to be received. This parameter is needed if acknowledged mode is used. UE shall also assume that the UTRAN transmitter window is equal to this value   |         |
| >>Downlink RLC status Info        | MP                |                 | Downlink<br>RLC status<br>info<br>10.3.4.1   |  |         |
| >UM RLC                           |                   |                 |  |  |         |
| >>DL UM RLC LI size               | MP                |                 | Integer(7,<br>15)  | Size in bits to use for the downlink RLC UM LI.  | REL-5   |
| >>DL Reception Window Size        | CV-Not-<br>SIB160 |                 | Integer(32,<br>48, 64, 80,<br>96, 112)   |  | REL-6   |
| >TM RLC                           |                   |                 |  |  |         |
| >>Segmentation indication         | MP                |                 | Boolean  | TRUE indicates that segmentation is performed.   |         |
| One sided RLC re-establishment    | MP                |                 | Boolean  | TRUE indicates that only one side of the AM RLC entity is re-established.  | REL-5   |
| Alternative E-bit interpretation  | CV-Not-<br>SIB16o |                 | Enumerated (true)  | The absence of this IE implies: "normal E-bit interpretation".   | REL-6   |
| Use special value of HE field     | CV-Not-<br>SIB160 |                 | Enumerated (true)  | The absence of this IE implies: "do not use special value of the HE field" NOTE 2, NOTE 4  | REL-7   |
| NOTE 1: If included in SIB type 1 | 6, the "Flexible  | e size" does n  | ot apply for dow   | nlink RLC PDU size (AM RLC).   |         |
| NOTE 2: If the value of the IE "U | se special valu   | ue of HE field" | is used in a reco  |  |         |

from the previously configured value, then both of the IEs "Uplink RLC mode" and "Downlink RLC mode" should be included in the message, otherwise the UE behaviour is unspecified.

NOTE 3: Void

NOTE 4: If the IE "Use special value of HE field" is absent in the received message while the previously configured value of IE "Use special value of HE field" is set to true and the received message does not initiate any RLC re-establishment procedure on the corresponding downlink RLC entity, then the UE will drop AM data PDUs with special value of HE and it will lead to either RLC reset procedure or RLC unrecoverable error [16].

| Condition  | Explanation   |
|------------|---|
| Not-SIB160 | If included in SYSTEM INFORMATION BLOCK TYPE            |
|            | 16, this IE is not needed. Otherwise the IE is optional |

NOTE: This information element is included within IE "Predefined RB configuration".

#### 10.3.4.23a RLC info MBMS

The IE RLC info MBMS is used for point-to-multipoint radio bearers, featuring only the downlink RLC UMD.

| Information Element/Group name               | Need    | Multi | Type and reference   | Semantics description                           | Version |
|--|---------|-------|--|---|---------|
| DL UM RLC LI size                            | MP      |       | Integer (7,<br>15)   | Size in bits to use for the downlink RLC UM LI. | REL-6   |
| DL Duplication Avoidance and Reordering info | CV-MTCH |       | UM<br>Duplication<br>Avoidance<br>and<br>Reordering<br>info<br>10.3.4.26 |   | REL-6   |
| DL Out of sequence delivery info             | CV-MCCH |       | UM Out of<br>sequence<br>delivery info<br>10.3.4.27                      |   | REL-6   |

| Condition | Explanation                                      |
|-----------|--|
| MTCH      | If the IE concerns MTCH (see Note 1), this IE is |
|           | optional. Otherwise the IE is not needed.        |
| MCCH      | If the IE concerns MCCH, this IE is optional.    |
|           | Otherwise the IE is not needed.                  |

NOTE 1: The UE behaviour is unspecified if this IE is received with regard to an MTCH configured for MBSFN operation. A network should not send this IE with regard to an MTCH configured for MBSFN operation.

### 10.3.4.24 Signalling RB information to setup

| Information Element/Group name | Need | Multi | Type and reference        | Semantics description                                   |
|--------------------------------|------|-------|---------------------------|---|
| RB identity                    | MD   |       | RB identity<br>10.3.4.16  | Default value is specified in subclause 8.6.4.1         |
| CHOICE RLC info type           | MP   |       |                           |   |
| >RLC info                      |      |       | RLC info<br>10.3.4.23     |   |
| >Same as RB                    |      |       | RB identity<br>10.3.4.16  | Identity of RB with exactly the same RLC info IE values |
| RB mapping info                | MP   |       | RB mapping info 10.3.4.21 |   |

NOTE: This information element is included within IE "Predefined RB configuration".

#### 10.3.4.25 Transmission RLC Discard

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   |
|--------------------------------|------|-------|--------------------|---|
| CHOICE SDU Discard Mode        | MP   |       |                    | Different modes for discharge the RLC buffer on the transmitter side; "Timer based with explicit signalling", "Timer based without explicit signalling", "Discard after Max_DAT retransmissions" or "No_discard". For unacknowledged mode and |

| Information Element/Group name    | Need     | Multi | Type and reference  | Semantics description  |
|-----------------------------------|----------|-------|---|--|
|                                   |          |       | 1010101100  | transparent mode, only Timer based without explicit signalling is applicable. If "No_discard" is used, reset procedure shall be done after Max_DAT retransmissions |
| >Timer based explicit >>Timer_MRW | MP       |       | Integer(50,6<br>0, 70, 80, 90,<br>100, 120,<br>140, 160,<br>180, 200,<br>300, 400,<br>500, 700,<br>900)                     | Elapsed time in milliseconds. It is used to trigger the retransmission of a STATUS PDU containing an MRW SUFI field  |
| >>Timer_discard                   | MP       |       | Integer(100,<br>250, 500,<br>750, 1000,<br>1250, 1500,<br>1750, 2000,<br>2500, 3000,<br>3500, 4000,<br>4500, 5000,<br>7500) | Elapsed time in milliseconds before a SDU is discarded.  |
| >>MaxMRW                          | MP       |       | Integer(1, 4,<br>6, 8, 12 16,<br>24, 32)  | Defined in [16]  |
| >Timer based no explicit          |          |       |   |  |
| >>Timer_discard                   | MP       |       | Integer(10,2<br>0,30,40,50,6<br>0,70,80,90,1<br>00)   | Elapsed time in milliseconds before a SDU is discarded.  |
| >Max DAT retransmissions          |          |       |   |  |
| >>Max_DAT                         | MP       |       | Integer(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40)  | Defined in [16]  |
| >>Timer_MRW                       | MP       |       | Integer(50,<br>60, 70, 80,<br>90, 100, 120,<br>140, 160,<br>180, 200,<br>300, 400,<br>500, 700,<br>900)                     | Elapsed time in milliseconds. It is used to trigger the retransmission of a STATUS PDU containing an MRW SUFI field  |
| >>MaxMRW                          | MP       |       | Integer(1, 4,<br>6, 8, 12 16,<br>24, 32)  | Defined in [16]  |
| >No discard                       | <b> </b> |       |   |  |
| >>Max_DAT                         | MP       |       | Integer(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40)  | Defined in [16]  |

| CHOICE SDU Discard Mode | Condition under which the given SDU Discard         |
|-------------------------|---|
|                         | Mode is chosen                                      |
| Timer based explicit    | If the modes for discharge of the RLC buffer on the |
|                         | transmitter side is "Timer based with explicit      |
|                         | signalling"   |
| Timer based no explicit | If the modes for discharge of the RLC buffer on the |
|                         | transmitter side is "Timer based without explicit   |
|                         | signalling"   |
|                         | For unacknowledged mode, only Timer based without   |

|                         | explicit signalling is applicable.                  |
|-------------------------|---|
| Max DAT retransmissions | If the modes for discharge of the RLC buffer on the |
|                         | transmitter side is "Discard after Max_DAT          |
|                         | retransmissions"                                    |
| No discard              | If the modes for discharge the of RLC buffer on the |
|                         | transmitter side is "Reset procedure shall be done  |
|                         | after Max_DAT retransmissions"                      |

## 10.3.4.26 UM Duplication Avoidance and Reordering info

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description   | Version |
|--------------------------------|------|-------|--|---|---------|
| Timer_DAR                      | MP   |       | Integer(40,<br>80, 120, 160,<br>240, 320,<br>480, 640,<br>960, 1280,<br>1920, 2560,<br>3840, 5120) | Timer (in milliseconds) when PDUs are released to the upper layers even though there are outstanding PDUs with lower RLC SN values. | REL-6   |
| Window size DAR                | MP   |       | Integer(4, 8, 16, 32, 40, 48, 56, 64)  |   | REL-6   |

## 10.3.4.27 UM Out of sequence delivery info

| Information Element/Group name | Need    | Multi | Type and reference | Semantics description | Version |
|--------------------------------|---------|-------|--------------------|-----------------------|---------|
| Timer_OSD                      | CV-     |       | Integer (40,       |                       | REL-6   |
|                                | notMCCH |       | 80, 120, 160,      |                       |         |
|                                |         |       | 240, 320,          |                       |         |
|                                |         |       | 480, 640,          |                       |         |
|                                |         |       | 960, 1280,         |                       |         |
|                                |         |       | 1920, 2560,        |                       |         |
|                                |         |       | 3840, 5120)        |                       |         |
| Window size OSD                | MP      |       | Integer(8,         |                       | REL-6   |
|                                |         |       | 16, 32,40,         |                       |         |
|                                |         |       | 48, 56, 64)        |                       |         |

NOTE: This timer used to flush the buffer is configured at RRC level and indicated via a local primitive.

| Condition | Explanation   |
|-----------|---|
| notMCCH   | If this concerns a logical channel other than MCCH then this IE is mandatory otherwise it is not needed. In the latter case Timer_OSD takes the value of the IE Modification Period as indicated within the IE MCCH |
|           | configuration information   |

# 10.3.5 Transport CH Information elements

# 10.3.5.1 Added or Reconfigured DL TrCH information

| Information Element/Group name  | Need | Multi | Type and reference | Semantics description | Version |
|---------------------------------|------|-------|--------------------|-----------------------|---------|
| Downlink transport channel type | MP   |       | Enumerated(        | Note 2                |         |
|                                 |      |       | DCH,DSCH           |                       |         |
|                                 |      |       | ,HS-DSCH)          | Note 3                | REL-5   |

| Information Element/Group name                          | Need              | Multi        | Type and reference  | Semantics description  | Version |
|---|-------------------|--------------|---|--|---------|
| DL Transport channel identity                           | MP                |              | Transport<br>channel<br>identity<br>10.3.5.18                           |  |         |
|   | CV-not<br>HS-DSCH |              |   |  | REL-5   |
| CHOICE <i>DL parameters</i> >Explicit                   |                   |              |   |  |         |
| >>TFS   | MP                |              | Transport<br>Format Set<br>10.3.5.23                                    |  |         |
| >SameAsUL   |                   |              |   |  |         |
| >>Uplink transport channel type                         | MP                |              | Enumerated(<br>DCH,USCH)  | USCH is TDD only   |         |
| >>UL TrCH identity                                      | MP                |              | Transport<br>channel<br>identity<br>10.3.5.18                           | Same TFS applies<br>as specified for<br>indicated UL TrCH  |         |
| >HS-DSCH  |                   |              |   |  | REL-5   |
| >>HARQ Info   | OP                |              | HARQ info<br>10.3.5.7a  | For 1.28 Mcps<br>TDD, if HARQ<br>Information is<br>included in the IE<br>DL MultiCarrier<br>Information, this<br>IE shall not be<br>present. | REL-5   |
| >>CHOICE DL MAC header type                             | OP                |              |   |  | REL-7   |
| >>>MAC-hs   |                   |              |   |  | REL-7   |
| >>>Added or reconfigured MAC-d flow                     | MP                |              | Added or<br>reconfigured<br>MAC-d flow<br>10.3.5.1a                     |  | REL-5   |
| >>>MAC-ehs  |                   |              |   |  | REL-7   |
| >>>>Added or reconfigured MAC-ehs reordering queue      | MP                |              | Added or<br>reconfigured<br>MAC-ehs<br>reordering<br>queue<br>10.3.5.1c |  | REL-7   |
| DCH quality target                                      | OP                |              | Quality<br>target<br>10.3.5.10  |  |         |
| Note 1: Void  | •                 |              | •   |  |         |
| Note 2: The IE "Downlink trans<br>UE behaviour is unspe | cified.           |              |   |  |         |
| Note 3: If included in SIB type channel type".          | ro, the value 'F  | 19-D2CH, 006 | es not apply for the  | ne ie "Downlink transp   | υοπ     |

| Condition  | Explanation   |
|------------|---|
| NotHS-DSCH | If the downlink transport channel type is DCH or DSCH then this IE is mandatory otherwise it is not |
|            | needed.   |

# 10.3.5.1a Added or reconfigured MAC-d flow

This IE is used in relation to the MAC-d flows mapped to the HS-DSCH transport channel.

| Information Element/Group name          | Need | Multi                          | Type and reference   | Semantics description  | Version |
|---|------|--------------------------------|--|--|---------|
| MAC-hs queue to add or reconfigure list | OP   | <1 to<br>maxQueue<br>ID>       |  |  | REL-5   |
| >MAC-hs queue Id                        | MP   |                                | Integer(07)  | The MAC-hs<br>queue ID is<br>unique across all<br>MAC-d flows.   | REL-5   |
| >MAC-d Flow Identity                    | MP   |                                | MAC-d Flow<br>Identity<br>10.3.5.7c  |  | REL-5   |
| >T1                                     | MP   |                                | Integer(10,<br>20, 30, 40,<br>50, 60, 70,<br>80, 90, 100,<br>120, 140,<br>160, 200,<br>300, 400) | Timer (in milliseconds) when PDUs are released to the upper layers even though there are outstanding PDUs with lower TSN values. | REL-5   |
| >MAC-hs window size                     | MP   |                                | Integer(4, 6,<br>8, 12, 16, 24,<br>32)   |  | REL-5   |
|   |      |                                | Integer(32,<br>64, 96, 128,<br>160, 192,<br>256)   | The set of values is used for Multicarrier case in 1.28 Mcps TDD mode for 9bits TSN option.                                      | REL-7   |
| >MAC-d PDU size Info                    | OP   | <1 to max<br>MACdPDU<br>sizes> |  | Mapping of the different MAC-d PDU sizes configured for the HS-DSCH to the MAC-d PDU size index in the MAC-hs header.            | REL-5   |
| >>MAC-d PDU size                        | MP   |                                | Integer<br>(15000)   |  | REL-5   |
| >>MAC-d PDU size index                  | MP   |                                | Integer(07)  |  | REL-5   |
| MAC-hs queue to delete list             | OP   | <1 to<br>maxQueue<br>ID>       |  |  | REL-5   |
| >MAC-hs queue Id                        | MP   |                                | Integer(07)  | The MAC-hs<br>queue ID is<br>unique across all<br>MAC-d flows.   | REL-5   |

# 10.3.5.1b Added or reconfigured E-DCH MAC-d flow

This IE is used in relation to MAC-d flows mapped to the E-DCH transport channel.

| Information Element/Group name                     | Need      | Multi | Type and reference  | Semantics description  | Version        |
|--|-----------|-------|---|--|----------------|
| E-DCH MAC-d flow identity                          | MP        |       | E-DCH<br>MAC-d flow<br>identity<br>10.3.5.7e  |  | REL-6          |
| E-DCH MAC-d flow power offset                      | OP        |       | Integer(06)   | Only allowed to<br>be absent when<br>already defined<br>for this E-DCH<br>MAC-d flow, unit<br>is dB  | REL-6          |
| E-DCH MAC-d flow maximum number of retransmissions | OP        |       | Integer<br>(015)  | Only allowed to<br>be absent when<br>already defined<br>for this E-DCH<br>MAC-d flow   | REL-6          |
| E-DCH MAC-d flow retransmission timer              | CV-Tdd128 |       | Enumerated (10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 110, 120, 140, 160, 200, 240, 280, 320, 400, 480, 560) | Unit: ms   | REL-7          |
| E-DCH MAC-d flow multiplexing list                 | OP        |       | Bitstring<br>(maxE-<br>DCHMACdFI<br>ow)   | Indicates, if this is the first MAC-d flow for which PDUs are placed in the MAC-e PDU, the other MAC-d flows from which MAC-d PDUs are allowed to be included in the same MAC-e PDU.  Bit 0 is for MAC-d flow 0, Bit 1 is for MAC-d flow 1, Value '1' for a bit means multiplexing is allowed. Bit 0 is the first/leftmost bit of the bit string.  NOTE: The bit that corresponds to the MAC-d flow itself is ignored. | REL-6          |
| CHOICE transmission grant type                     | OP        |       |   | Only allowed to<br>be absent when<br>already defined<br>for this E-DCH<br>MAC-d flow   | REL-6          |
| >Non-scheduled transmission grant info             |           |       |   |  | REL-6          |
| >>CHOICE mode                                      | MP        |       |   |  | REL-7          |
| >>>FDD >>>>Max MAC-e PDU contents size             | MP        |       | Integer<br>(119982)   |  | REL-7<br>REL-6 |

| >>>>2ms non-scheduled transmission grant HARQ process allocation | MD | Bitstring (8) | MAC-d PDUs for this MAC-d flow are only allowed to be transmitted in those processes for which the bit is set to "1".  Bit 0 corresponds to HARQ process 0, bit 1 corresponds to HARQ process 1,  Default value is: transmission in all HARQ processes is allowed. Bit 0 is the first/leftmost bit of the bit string. | REL-6 |
|--|----|---------------|---|-------|
|  |    | NULL          | No data   | REL-7 |
| >Scheduled transmission grant info                               |    | NULL          |   | REL-6 |

| Condition | Explanation                                    |
|-----------|--|
| Tdd128    | This IE is mandatory present for 1.28Mcps TDD, |
|           | otherwise it is not needed.                    |

# 10.3.5.1c Added or reconfigured MAC-ehs reordering queue

This IE is used in relation to the MAC-ehs reordering queues mapped to the HS-DSCH transport channel.

| Information Element/Group name           | Need | Multi                    | Type and reference  | Semantics description  | Version |
|--|------|--------------------------|---|--|---------|
| MAC-ehs queue to add or reconfigure list | OP   | <1 to<br>maxQueue<br>ID> |   | •  | REL-7   |
| >MAC-ehs queue Id                        | MP   |                          | MAC-ehs<br>Queue Id<br>10.3.5.7f  |  | REL-7   |
| >T1                                      | MP   |                          | Integer (10,<br>20, 30, 40,<br>50, 60, 70,<br>80, 90, 100,<br>120, 140,<br>160, 200,<br>300, 400) | Timer (in milliseconds) when PDUs are released to the upper layers even though there are outstanding PDUs with lower TSN values.                     | REL-7   |
| >Treset                                  | MD   |                          | Integer (1, 2, 3, 4)  | Timer in multiples of T1 values (milliseconds). Used when MAC-ehs reordering queue is reset in CELL_FACH and CELL_PCH (FDD only). Default value is 2 | REL-7   |
| >MAC-ehs window size                     | MP   |                          | Integer (4, 6,<br>8, 12, 16, 24,<br>32)   | One spare value needed.  | REL-7   |

# 10.3.5.2 Added or Reconfigured UL TrCH information

| Information Element/Group name                   | Need            | Multi                              | Type and reference   | Semantics description            | Version     |
|--|-----------------|------------------------------------|--|----------------------------------|-------------|
| Uplink transport channel type                    | MP              |                                    | Enumerated(<br>DCH,USCH                                      | USCH is TDD only                 |             |
|  |                 |                                    | ,E-DCH)  | Note 1                           | REL-6       |
| UL Transport channel identity                    | MP              |                                    | Transport<br>channel<br>identity<br>10.3.5.18                |                                  |             |
|  | CV-NotE-<br>DCH |                                    |  |                                  | REL-6       |
| CHOICE UL parameters                             |                 |                                    |  |                                  | REL-6       |
| >DCH,USCH  |                 |                                    |  |                                  | REL-6       |
| >>TFS  | MP              |                                    | Transport<br>Format Set<br>10.3.5.23                         |                                  |             |
| >E-DCH   |                 |                                    |  |                                  | REL-6       |
| >>CHOICE mode                                    | MP              |                                    |  |                                  | REL-7       |
| >>>FDD   |                 |                                    |  |                                  | REL-7       |
| >>>>E-DCH Transmission Time Interval             | MP              |                                    | Integer(2,10)  | Unit is ms.                      | REL-6       |
| >>>TDD   |                 |                                    |  | No data                          | REL-7       |
| >>HARQ info for E-DCH                            | MP              |                                    | 10.3.5.7d  |                                  | REL-6       |
| >>Added or reconfigured E-DCH<br>MAC-d flow list | OP              | <1 to<br>maxE-<br>DCHMACd<br>Flow> |  |                                  | REL-6       |
| >>>Added or reconfigured E-<br>DCH MAC-d flow    | MP              |                                    | Added or<br>reconfigured<br>E-DCH<br>MAC-d flow<br>10.3.5.1b |                                  | REL-6       |
| Note 1: If included in System In channel type".  | formation Blo   | ck Type 16, the                    | values 'E-DCH  | does not apply for the IE "Uplin | k transport |

| Condition | Explanation   |
|-----------|---|
| NotE-DCH  | If the uplink transport channel type is DCH or USCH   |
|           | then this IE is mandatory otherwise it is not needed. |

NOTE: This information element is included within IE "Predefined RB configuration".

## 10.3.5.2a Additional Dynamic Transport Format Information for CCCH

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description   | Version |
|--------------------------------|------|-------|---------------------|---|---------|
| RLC Size                       | MP   |       | Integer<br>(484968) | Unit is bits For FDD, values are restricted to: Integer (48296 by step of 8, 3121320 by step of 16, 13844968 by step of 64) | Rel-6   |
| Number of Transport blocks     | MP   |       | Integer(1)          | NOTE 1  | Rel-6   |

NOTE 1: The "Integer (1)" type does not result in bits in the transfer syntax and is not needed in the ASN.1.

## 10.3.5.2b Additional RACH TFCS for CCCH

| Information Element/Group | Need | Multi | Type and     | Semantics       | Version |
|---------------------------|------|-------|--------------|-----------------|---------|
| name                      |      |       | reference    | description     |         |
| Power offset Information  | MP   |       | Power Offset | The actual TFCS | Rel-6   |
|                           |      |       | Information  | is specified in |         |
|                           |      |       | 10.3.5.8     | 8.6.5.12a       |         |

#### 10.3.5.3 Void

# 10.3.5.3a Common MAC-ehs reordering queue list

NOTE: For FDD only.

This IE is defines common MAC-ehs priority queue parameters, which can be used for CCCH and SRB1 reception.

| Information Element/Group name  | Need | Multi                              | Type and reference  | Semantics description   | Version |
|---------------------------------|------|------------------------------------|---|---|---------|
| MAC-ehs queue to configure list | MP   | <1 to<br>maxComm<br>onQueuel<br>D> |   |   | REL-7   |
| >MAC-ehs queue Id               | MP   |                                    | MAC-ehs<br>Queue Id<br>10.3.5.7f  |   | REL-7   |
| >T1                             | MP   |                                    | Integer (10,<br>20, 30, 40,<br>50, 60, 70,<br>80, 90, 100,<br>120, 140,<br>160, 200,<br>300, 400) | Timer (in milliseconds) when PDUs are released to the upper layers even though there are outstanding PDUs with lower TSN values.                    | REL-7   |
| >Treset                         | MD   |                                    | Integer (1, 2, 3, 4)  | Timer in multiples of T1 values (milliseconds). Used when MACehs reordering queue is reset in CELL_FACH and CELL_PCH (FDD only). Default value is 2 | REL-7   |
| >MAC-ehs window size            | MP   |                                    | Integer (4, 6,<br>8, 12, 16, 24,<br>32)   |   | REL-7   |

### 10.3.5.4 Deleted DL TrCH information

| Information Element/Group name        | Need              | Multi | Type and reference                            | Semantics description | Version |
|---------------------------------------|-------------------|-------|---|-----------------------|---------|
| Downlink transport channel type       | MP                |       | Enumerated (DCH,DSCH                          | Note 1                |         |
|                                       |                   |       | , HS-DSCH)                                    |                       | REL-5   |
| DL Transport channel identity         | MP                |       | Transport<br>channel<br>identity<br>10.3.5.18 |                       |         |
|                                       | CV-notHS-<br>DSCH |       |   |                       | REL-5   |
| CHOICE DL MAC header type             | CV-HS-<br>DSCH    |       |   |                       | REL-7   |
| >MAC-hs                               |                   |       |   |                       | REL-7   |
| >>DL HS-DSCH MAC-d flow identity      | MP                |       | MAC-d flow identity 10.3.5.7c                 |                       | REL-5   |
| >MAC-ehs                              |                   |       |   |                       | REL-7   |
| >>DL HS-DSCH MAC-ehs reordering queue | MP                |       | MAC-ehs<br>Queue Id<br>10.3.5.7f              |                       | REL-7   |

Note 1: The IE "Downlink transport channel type" value " DSCH " should not be used for FDD. If received the UE behaviour is unspecified.

| Condition  | Explanation   |
|------------|---|
| NotHS-DSCH | If the downlink transport channel type is DCH or DSCH then this IE is mandatory otherwise it is not needed. |
| HS-DSCH    | If the downlink transport channel type is HS-DSCH then this IE is mandatory otherwise it is not needed.     |

# 10.3.5.5 Deleted UL TrCH information

| Information Element/Group     | Need     | Multi | Type and    | Semantics description | Version |
|-------------------------------|----------|-------|-------------|-----------------------|---------|
| name                          |          |       | reference   |                       |         |
| Uplink transport channel type | MP       |       | Enumerated( | USCH is TDD only      |         |
|                               |          |       | DCH,USCH    |                       |         |
|                               |          |       | ,E-DCH)     |                       | REL-6   |
| UL Transport channel identity | MP       |       | Transport   |                       |         |
|                               |          |       | channel     |                       |         |
|                               |          |       | identity    |                       |         |
|                               |          |       | 10.3.5.18   |                       |         |
|                               | CV-NotE- |       |             |                       | REL-6   |
|                               | DCH      |       |             |                       |         |
| E-DCH MAC-d flow identity     | CV-E-DCH |       | E-DCH       |                       | REL-6   |
|                               |          |       | MAC-d flow  |                       |         |
|                               |          |       | identity    |                       |         |
|                               |          |       | 10.3.5.7e   |                       |         |

| Condition | Explanation   |
|-----------|---|
| NotE-DCH  | If the uplink transport channel type is DCH or USCH     |
|           | then this IE is mandatory otherwise it is not needed.   |
| E-DCH     | If the uplink transport channel type is E-DCH then this |
|           | IE is mandatory otherwise it is not needed.             |

# 10.3.5.6 DL Transport channel information common for all transport channels

| Information Element/Group          | Need | Multi                                   | Type and  | Semantics   | Version |
|------------------------------------|------|---|---|---|---------|
| name                               |      |   | reference   | description   |         |
| SCCPCH TFCS                        | OP   |   | Transport Format Combination Set 10.3.5.20                      | This IE should not<br>be included in this<br>version of the<br>protocol.  |         |
| CHOICE mode                        | MP   |   |   | Although this IE is<br>not always<br>required, need is<br>MP to align with<br>ASN.1                                 |         |
|                                    | OP   |   |   |   | REL-4   |
| >FDD                               |      |   |   |   |         |
| >>CHOICE DL parameters             | OP   |   |   |   |         |
| >>>Explicit >>>>DL DCH TFCS        | MP   |   | Transport<br>Format<br>Combination<br>Set<br>10.3.5.20          | Although this IE is<br>not always<br>required, need is<br>MP to align with<br>ASN.1                                 |         |
|                                    | OP   |   |   |   | REL-4   |
| >>>SameAsUL                        |      |   |   | (no data)<br>See note 2   |         |
| >TDD                               |      |   |   |   |         |
| >>Individual DL CCTrCH information | OP   | 1 to<br><maxcctr<br>CH&gt;</maxcctr<br> |   |   |         |
| >>>DL TFCS Identity                | MP   |   | Transport<br>format<br>combination<br>set identity<br>10.3.5.21 | Identifies a special CCTrCH for shared or dedicated channels.   |         |
| >>>CHOICE DL parameters            | MP   |   |   |   |         |
| >>>Independent                     |      |   |   |   |         |
| >>>>DL TFCS                        | MP   |   | Transport<br>format<br>combination<br>set 10.3.5.20             |   |         |
| >>>SameAsUL                        |      |   |   | See note 2  |         |
| >>>>UL DCH TFCS Identity           | MP   |   | Transport<br>format<br>combination<br>set identity<br>10.3.5.21 | Same TFCS applies as specified for the indicated UL DCH TFCS identity except for information applicable for UL only |         |

NOTE 1: This information element is included within IE "Predefined TrCh configuration".

NOTE 2: The UTRAN should only use the choice "SameAsUL" if the transport channel numbering, the number of TFs in the TFS of each transport channel, and the TFCS are identical in the uplink and downlink.

10.3.5.7 Void

### 10.3.5.7a HARQ Info

This IE is used in relation to the HS-DSCH transport channel.

| Information Element/Group name     | Need | Multi                       | Type and reference   | Semantics description   | Version |
|------------------------------------|------|-----------------------------|--|---|---------|
| Number of Processes                | MP   |                             | Integer<br>(18,  |   | REL-5   |
|                                    |      |                             | 12, 14, 16)  | NOTE 1, NOTE 2  | REL-7   |
| CHOICE Memory Partitioning         | MP   |                             |  |   | REL-5   |
| >Implicit                          |      |                             |  | UE shall apply memory partitioning of equal size across all HARQ processes              | REL-5   |
| >Explicit                          |      |                             |  |   | REL-5   |
| >>Memory size                      | MP   | <1 to<br>MaxHProc<br>esses> |  |   | REL-5   |
| >>>Process Memory size             | MP   |                             | Integer(800<br>16000 by<br>step of 800,<br>17600<br>32000 by<br>step of 1600,<br>36000<br>80000 by<br>step of 4000,<br>88000<br>160000 by<br>step of 8000,<br>176000<br>304000 by<br>step of | Maximum number<br>of soft channel<br>bits available in<br>the virtual IR<br>buffer [27] | REL-5   |
| >>Additional memory sizes for MIMO | OP   | <1 to<br>MaxHProc<br>esses> | 10000)   | NOTE 2  | REL-7   |
| >>>Process Memory size             | MP   |                             | Integer (800 16000 by step of 800, 17600 32000 by step of 1600, 36000 80000 by step of 4000, 88000 160000 by step of 8000, 176000 304000 by step of 16000)                                   | Maximum number<br>of soft channel<br>bits available in<br>the virtual IR<br>buffer [27] | REL-7   |

NOTE 1: If the IE "Number of processes" is not set to one of the values 12, 14 or 16 and the IE "MIMO parameters" (10.3.6.41a) is included and the IE "MIMO operation" is set to either "start" or "continue", the UE behaviour is unspecified. If the IE "Number of processes" is set to one of the values 12, 14, or 16 and the IE "MIMO parameters" (10.3.6.41a) is not included, the UE behaviour is unspecified.

NOTE 2: The values of the IE "Number of processes" greater than 8 and the IE "Additional memory sizes for MIMO" are not needed in SIB type 5 and SIB type 5bis.

## 10.3.5.7b Void

# 10.3.5.7c MAC-d Flow Identity

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| MAC-d flow identity            | MP   |       | Integer (07)       |                       | REL-5   |

## 10.3.5.7d HARQ Info for E-DCH

This IE is used in relation to the E-DCH transport channel.

| Information Element/Group name | Need | Multi | Type and reference           | Semantics description   | Version |
|--------------------------------|------|-------|------------------------------|---|---------|
| CHOICE mode                    | MP   |       |                              | •   | REL-7   |
| >FDD                           |      |       |                              |   | REL-7   |
| >>HARQ RV Configuration        | MP   |       | Enumerated<br>(rv0, rvtable) | If "rv0" is indicated, the UE shall only use E_DCH RV index 0. If "rvtable" is indicated, the UE shall use an RSN based RV index as specified in [27] | REL-6   |
| >TDD                           |      |       |                              |   | REL-7   |
| >>HARQ RV Configuration        | MP   |       | Enumerated<br>(rv0, rvtable) | If "rv0" is indicated, the UE shall only use E_DCH RV index 0. If "rvtable" is indicated, the UE shall use an RSN based RV index as specified in [31] | REL-7   |

# 10.3.5.7e E-DCH MAC-d Flow Identity

| Information Element/Group name | Need | Multi | Type and reference                       | Semantics description | Version |
|--------------------------------|------|-------|--|-----------------------|---------|
| E-DCH MAC-d flow identity      | MP   |       | Integer<br>(0maxE-<br>DCHMACdFI<br>ow-1) |                       | REL-6   |

# 10.3.5.7f MAC-ehs Queue Id

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| MAC-ehs queue id               | MP   |       | Integer (07)       |                       | REL-7   |

# 10.3.5.8 Power Offset Information

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   |
|--------------------------------|------|-------|--------------------|---|
| CHOICE Gain Factors            | MP   |       |                    |   |
| >Signalled Gain Factors        |      |       |                    |   |
| >>CHOICE mode                  |      |       |                    |   |
| >>>FDD                         |      |       |                    |   |
| >>> Gain Factor $\beta_c$      | MP   |       | Integer<br>(0 15)  | For UL DPCCH or control part of PRACH   |
| >>>TDD                         |      |       |                    | (no data)   |
| >>Gain Factor $\beta_d$        | MP   |       | Integer<br>(015)   | For UL DPDCH or data part of PRACH and all uplink channels in TDD   |
| >>Reference TFC ID             | ОР   |       | Integer (03)       | If this TFC is a reference TFC, indicates the reference ID.   |
| >Computed Gain Factors         |      |       |                    |   |
| >>Reference TFC ID             | MP   |       | Integer<br>(0 3)   | Indicates the reference TFC Id of the TFC to be used to calculate the gain factors for this TFC. In case of using computed gain factors, at least one signalled gain factor is necessary for reference. |
| CHOICE mode                    | MP   |       |                    |   |
| >FDD                           |      |       |                    |   |
| >>Power offset P p-m           | OP   |       | Integer(-<br>510)  | In dB. Power offset between the last transmitted preamble and the control part of the message (added to the preamble power to receive the power of the message control part )  Needed only for PRACH    |
| >TDD                           |      |       |                    | (no data)   |

| CHOICE Gain Factors    | Condition under which the way to signal the Gain Factors is chosen  |
|------------------------|---|
| Signalled Gain Factors | The values for gain factors $\beta_c$ (only in FDD mode) and $\beta_d$ are signalled directly for a TFC.  |
| Computed Gain Factors  | The gain factors $\beta_c$ (only in FDD mode) and $\beta_d$ are computed for a TFC, based on the signalled settings for the associated reference TFC. |

# 10.3.5.9 Predefined TrCH configuration

This information element concerns a pre-defined configuration of transport channel parameters.

| Information Element/Group name                                     | Need | Multi  | Type and<br>Reference  | Semantics description |
|--|------|--|--|-----------------------|
| UL Transport channel information common for all transport channels | MP   |  | UL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.24 |                       |
| Added or Reconfigured TrCH information                             |      |  |  |                       |
| Added or Reconfigured UL TrCH information                          | MP   | 1 to<br><maxtrch<br>preconf&gt;</maxtrch<br> |  |                       |
| >Added or Reconfigured UL<br>TrCH information                      | MP   |  | Added or<br>Reconfigure<br>d UL TrCH<br>information<br>10.3.5.2                                |                       |
| DL Transport channel information common for all transport channels | MP   |  | DL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.6  |                       |
| Downlink transport channels  |      |  |  |                       |
| Added or Reconfigured DL TrCH information                          | MP   | 1 to<br><maxtrch<br>preconf&gt;</maxtrch<br> |  |                       |
| >Added or Reconfigured DL<br>TrCH information                      | MP   |  | Added or<br>Reconfigure<br>d DL TrCH<br>information<br>10.3.5.1                                |                       |

# 10.3.5.10 Quality Target

| Information Element/Group name | Need | Multi | Type and reference                | Semantics description   |
|--------------------------------|------|-------|-----------------------------------|---|
| BLER Quality value             | MP   |       | Real(-6.3<br>0 by step of<br>0.1) | Signalled value is<br>Log10(Transport channel<br>BLER quality target) |

# 10.3.5.11 Semi-static Transport Format Information

| Information Element/Group name | Need | Multi | Type and reference                    | Semantics description  | Version |
|--------------------------------|------|-------|---------------------------------------|--|---------|
| Transmission time interval     | MP   |       | Integer(10,<br>20, 40, 80,<br>dynamic | In ms. The value dynamic is only used in TDD mode. For FDD DCH, the value "80" is applicable only when SF=512. |         |

| Information Element/Group name | Need      | Multi | Type and reference                                     | Semantics description                                       | Version |
|--------------------------------|-----------|-------|--|---|---------|
|                                |           |       | 5)   | 5 is only<br>applicable for the<br>RACH in 1.28<br>Mcps TDD | REL-4   |
| Type of channel coding         | MP        |       | Enumerated(<br>No coding,<br>Convolutiona<br>I, Turbo) | The option "No coding" is only valid for TDD.               |         |
| Coding Rate                    | CV-Coding |       | Enumerated(<br>1/2, 1/3)                               |   |         |
| Rate matching attribute        | MP        |       | Integer(1hi<br>RM)                                     |   |         |
| CRC size                       | MP        |       | Integer(0, 8, 12, 16, 24)                              | in bits   |         |

| Condition | Explanation  |
|-----------|--|
| Coding    | This IE is mandatory present if IE "Type of channel  |
|           | coding" is "Convolutional" and not needed otherwise. |

# 10.3.5.12 Void

# 10.3.5.13 TFCS Explicit Configuration

| Information Element/Group name              | Need | Multi | IE type and reference  | Semantics description |
|---|------|-------|--|-----------------------|
| CHOICE TFCS representation                  | MP   |       |  |                       |
| >Complete reconfiguration                   |      |       |  |                       |
| >>TFCS complete reconfiguration information | MP   |       | TFCS<br>Reconfigurat<br>ion/Addition<br>information<br>10.3.5.15 |                       |
| >Addition                                   |      |       |  |                       |
| >>TFCS addition information                 | MP   |       | TFCS Reconfigurat ion/Addition information 10.3.5.15             |                       |
| >Removal                                    |      |       |  |                       |
| >>TFCS removal information                  | MP   |       | TFCS<br>Removal<br>Information<br>10.3.5.16                      |                       |
| >Replace                                    |      |       |  |                       |
| >>TFCS removal information                  | MP   |       | TFCS<br>Removal<br>Information<br>10.3.5.16                      |                       |
| >>TFCS addition information                 | MP   |       | TFCS Reconfigurat ion/Addition information 10.3.5.15             |                       |

# 10.3.5.14 Void

# 10.3.5.15 TFCS Reconfiguration/Addition Information

| Information Element/Group name | Need | Multi                     | IE type and reference                   | Semantics description                     |
|--------------------------------|------|---------------------------|---|---|
| CHOICE CTFC Size               | MP   |                           |   |   |
| >2 bit CTFC                    |      |                           |   |   |
| >>CTFC information             | MP   | 1 to<br><maxtfc></maxtfc> |   |   |
| >>>2bit CTFC                   | MP   |                           | Integer(03)                             |   |
| >>>Power offset Information    | OP   |                           | Power Offset<br>Information<br>10.3.5.8 | Needed only for uplink physical channels. |
| >4 bit CTFC                    |      |                           |   |   |
| >>CTFC information             | MP   | 1 to <maxtfc></maxtfc>    |   |   |
| >>>4bit CTFC                   | MP   |                           | Integer(015                             |   |
| >>>Power offset Information    | OP   |                           | Power Offset<br>Information<br>10.3.5.8 | Needed only for uplink physical channels. |
| >6 bit CTFC                    |      |                           |   |   |
| >>CTFC information             | MP   | 1 to <maxtfc></maxtfc>    |   |   |
| >>>6 bit CTFC                  | MP   |                           | Integer(063                             |   |
| >>>Power offset Information    | OP   |                           | Power Offset<br>Information<br>10.3.5.8 | Needed only for uplink physical channels. |
| >8 bit CTFC                    |      |                           |   |   |
| >>CTFC information             | MP   | 1 to<br><maxtfc></maxtfc> |   |   |
| >>>8 bit CTFC                  | MP   |                           | Integer(025<br>5)                       |   |
| >>>Power offset Information    | ОР   |                           | Power Offset<br>Information<br>10.3.5.8 | Needed only for uplink physical channels. |
| >12 bit CTFC                   |      |                           |   |   |
| >>CTFC information             | MP   | 1 to <maxtfc></maxtfc>    |   |   |
| >>>12 bit CTFC                 | MP   |                           | Integer(040<br>95)                      |   |
| >>>Power offset Information    | OP   |                           | Power Offset<br>Information<br>10.3.5.8 | Needed only for uplink physical channels. |
| >16 bit CTFC                   |      |                           |   |   |
| >>CTFC information             | MP   | 1 to<br><maxtfc></maxtfc> |   |   |
| >>>16 bit CTFC                 | MP   |                           | Integer(065<br>535)                     |   |
| >>>Power offset Information    | OP   |                           | Power Offset<br>Information<br>10.3.5.8 | Needed only for uplink physical channels. |
| >24 bit CTFC                   |      |                           |   |   |
| >>CTFC information             | MP   | 1 to<br><maxtfc></maxtfc> |   |   |
| >>>24 bit CTFC                 | MP   |                           | Integer(016<br>777215)                  |   |
| >>>Power offset Information    | OP   |                           | Power Offset<br>Information<br>10.3.5.8 | Needed only for uplink physical channels. |

#### 10.3.5.16 TFCS Removal Information

| Information Element/Group | Need | Multi             | IE type and | Semantics description        |
|---------------------------|------|-------------------|-------------|------------------------------|
| name                      |      |                   | reference   |                              |
| Removal TFCI information  | MP   | 1 to              |             |                              |
|                           |      | <maxtfc></maxtfc> |             |                              |
| >TFCI                     | MP   |                   | Transport   | In TDD 0 is a reserved value |
|                           |      |                   | Format      |                              |
|                           |      |                   | Combination |                              |
|                           |      |                   | (TFC)       |                              |
|                           |      |                   | 10.3.5.19   |                              |

#### 10.3.5.17 Void

## 10.3.5.18 Transport channel identity

This information element is used to distinguish transport channels. Transport channels of different type (RACH, USCH, FACH/PCH, DSCH or DCH) have separate series of identities. This also holds for uplink and downlink transport channel identities (i.e. for DCH). Depending on in which context a transport channel identity n that is sent, it will have different meaning

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Transport channel identity     | MP   |       | Integer(132        |                       |

## 10.3.5.19 Transport Format Combination (TFC)

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description |
|--------------------------------|------|-------|---------------------|-----------------------|
| Transport format combination   | MP   |       | Integer (0<br>1023) |                       |

#### 10.3.5.20 Transport Format Combination Set

Indicates the allowed combinations of already defined Transport formats and the mapping between these allowed TFCs and the corresponding TFCI values.

For TDD, different coded composite transport channels have independent transport format combination sets and thus independent TFCI values.

| Information Element/Group name | Need | Multi | IE type and reference                           | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| TFCI Field 1 Information       | MP   |       | TFCS<br>explicit<br>Configuratio<br>n 10.3.5.13 |                       |

### 10.3.5.21 Transport Format Combination Set Identity

NOTE: Only for TDD.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description           |
|--------------------------------|------|-------|--------------------|---------------------------------|
| TFCS ID                        | MD   |       | Integer            | Indicates the identity of every |

|                          |    | (18)    | TFCS within a UE. Default value is 1.                        |
|--------------------------|----|---------|--|
| Shared Channel Indicator | MP | Boolean | TRUE indicates the use of shared channels. Default is false. |

# 10.3.5.22 Transport Format Combination Subset

Indicates which Transport format combinations in the already defined Transport format combination set are allowed.

| Information Element/Group name                      | Need | Multi                                 | Type and reference                              | Semantics description |
|---|------|---------------------------------------|---|-----------------------|
| CHOICE Subset representation                        | MP   |                                       |   |                       |
| >Minimum allowed Transport format combination index |      |                                       | Transport<br>format<br>combination<br>10.3.5.19 |                       |
| >Allowed transport format combination list          |      | 1 to <maxtfc></maxtfc>                |   |                       |
| >>Allowed transport format combination              | MP   |                                       | Transport format combination 10.3.5.19          |                       |
| >Non-allowed transport format combination list      |      | 1 to<br><maxtfc></maxtfc>             |   |                       |
| >>Non-allowed transport format combination          | MP   |                                       | Transport format combination 10.3.5.19          |                       |
| >Restricted TrCH information                        |      | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |   |                       |
| >>Uplink transport channel type                     | MP   |                                       | Enumerated(<br>DCH, USCH)                       | USCH is TDD only      |
| >>Restricted UL TrCH identity                       | MP   |                                       | Transport<br>channel<br>identity<br>10.3.5.18   |                       |
| >>Allowed TFIs                                      | OP   | 1 to<br><maxtf></maxtf>               |   |                       |
| >>>Allowed TFI                                      | MP   |                                       | Integer(031                                     |                       |
| >Full transport format combination set              |      |                                       |   | (No data)             |

# 10.3.5.23 Transport Format Set

| Information Element/Group name         | Need             | Multi                   | Type and reference                  | Semantics description   | Version |
|--|------------------|-------------------------|-------------------------------------|---|---------|
| CHOICE Transport channel type          | MP               |                         |                                     |   |         |
| >Dedicated transport channels          |                  |                         |                                     | The transport channel that is configured with this TFS is of type DCH |         |
| >>Dynamic Transport Format Information | MP               | 1 to<br><maxtf></maxtf> |                                     |   |         |
| >>>RLC Size                            | MP               |                         | Integer(165<br>000 by step<br>of 8) | Unit is bits  |         |
| >>>Number of TBs and TTI List          | MP               | 1 to<br><maxtf></maxtf> |                                     | Present for every valid number of TB's (and TTI) for this RLC Size.   |         |
| >>>>Transmission Time Interval         | CV-<br>dynamicTT |                         | Integer(10,2<br>0,40,80)            | Unit is ms.   |         |

| Information Element/Group name             | Need                             | Multi                   | Type and reference   | Semantics description   | Version |
|--|----------------------------------|-------------------------|--|---|---------|
| >>>>Number of Transport                    | MP                               |                         | Integer(051<br>2)  |   |         |
| >>>CHOICE Logical Channel List             | MP                               |                         |  | The logical channels that are allowed to use this RLC Size  |         |
| >>>ALL                                     |                                  |                         | Null   | All logical channels mapped to this transport channel.  |         |
| >>>Configured                              |                                  |                         | Null   | The logical channels configured to use this RLC size in the <i>RB mapping info</i> . 10.3.4.21 if present in this message or in the previously stored configuration otherwise             |         |
| >>>Explicit List                           |                                  | 1 to 15                 |  | Lists the logical channels that are allowed to use this RLC size.   |         |
| >>>>RB Identity                            | MP                               |                         | RB identity<br>10.3.4.16                                       |   |         |
| >>>>LogicalChannel                         | CH-UL-<br>RLCLogica<br>IChannels |                         | Integer(01)  | Indicates the relevant UL logical channel for this RB. "0" corresponds to the first, "1" corresponds to the second UL logical channel configured for this RB in the IE "RB mapping info". |         |
| >>Semi-static Transport Format Information | MP                               |                         | Semi-static<br>Transport<br>Format<br>Information<br>10.3.5.11 |   |         |
| >Common transport channels                 |                                  |                         |  | The transport channel that is configured with this TFS is of a type not equal to DCH  |         |
| >>Dynamic Transport Format Information     | MP                               | 1 to<br><maxtf></maxtf> |  | Note  |         |
| >>>RLC Size                                | MP                               |                         | Integer<br>(484968)  | Unit is bits. For FDD, values are restricted to: Integer (48296 by step of 8, 3121320 by step of 16, 13844968 by step of 64).   |         |
| >>>Number of TBs and TTI List              | MP                               | 1 to<br><maxtf></maxtf> |  | Present for every valid number of TB's (and TTI) for this RLC Size.   |         |
| >>>Number of Transport blocks              | MP                               |                         | Integer(051<br>2)  |   |         |
| >>>>CHOICE mode >>>>>FDD                   | MP                               |                         |  | (no data)   |         |
| >>>>TDD                                    |                                  |                         |  |   |         |
| >>>>>Transmission Time Interval            | CV-<br>dynamicTT<br>I            |                         | Integer(10,2<br>0,40,80)                                       | Unit is ms.   |         |
| >>>CHOICE Logical Channel<br>List          | MP                               |                         |  | The logical channels that are allowed to use this RLC Size.   |         |
| >>>ALL                                     |                                  |                         | Null   | All logical channels mapped to this transport channel.  |         |
| >>>Configured                              |                                  |                         | Null   | The logical channels configured to use this RLC size in the <i>RB mapping info</i> . 10.3.4.21 if present in this message or in the previously stored configuration otherwise             |         |
| >>>Explicit List                           |                                  | 1 to 15                 |  | Lists the logical channels that are allowed to use this RLC size.   |         |

| Information Element/Group name             | Need                             | Multi | Type and reference   | Semantics description   | Version |
|--|----------------------------------|-------|--|---|---------|
| >>>>RB Identity                            | MP                               |       | RB identity<br>10.3.4.16                                       |   |         |
| >>>>LogicalChannel                         | CV-UL-<br>RLCLogica<br>IChannels |       | Integer(01)  | Indicates the relevant UL logical channel for this RB. "0" corresponds to the first, "1" corresponds to the second UL logical channel configured for this RB in the IE "RB mapping info". |         |
| >>Semi-static Transport Format Information | MP                               |       | Semi-static<br>Transport<br>Format<br>Information<br>10.3.5.11 |   |         |

| Condition             | Explanation  |
|-----------------------|--|
| dynamicTTI            | This IE is mandatory present if dynamic TTI usage is indicated in IE Transmission Time Interval in Semistatic Transport Format Information. Otherwise it is not needed.  |
| UL-RLCLogicalChannels | If "Number of uplink RLC logical channels" in IE "RB mapping info" in this message is 2 or the IE "RB mapping info" is not present in this message and 2 UL logical channels are configured for this RB, then this IE is mandatory present. Otherwise this IE is not needed. |

# 10.3.5.24 UL Transport channel information common for all transport channels

| Information Element/Group name | Need | Multi | Type and reference                                  | Semantics description   | Version |
|--------------------------------|------|-------|---|---|---------|
| PRACH TFCS                     | OP   |       | Transport<br>format<br>combination<br>set 10.3.5.20 | This IE should not be included in this version of the protocol. |         |
| CHOICE mode                    | OP   |       |   |   |         |
| >FDD                           |      |       |   |   |         |

| >>TFC subset                       | MD |   | Transport<br>Format<br>Combination                              | Default value is the complete existing set of   |       |
|------------------------------------|----|---|---|---|-------|
|                                    |    |   | Subset<br>10.3.5.22   | transport format combinations   |       |
| >>UL DCH TFCS                      | MP |   | Transport<br>format<br>combination<br>set 10.3.5.20             |   |       |
| >TDD                               |    |   |   |   |       |
| >>Individual UL CCTrCH information | OP | 1 to<br><maxcctr<br>CH&gt;</maxcctr<br> |   |   |       |
| >>>UL TFCS Identity                | MP |   | Transport<br>format<br>combination<br>set identity<br>10.3.5.21 | Identifies a special CCTrCH for shared or dedicated channels.                           |       |
| >>>UL TFCS                         | MP |   | Transport format combination set 10.3.5.20                      |   |       |
| >>>TFC subset                      | MD |   | Transport Format Combination Subset 10.3.5.22                   | Default value is<br>the complete<br>existing set of<br>transport format<br>combinations |       |
| TFC subset list                    | OP | 1 to<br><maxtfcs<br>ub&gt;</maxtfcs<br> |   | The maximum number of elements in the TFC subset list is 8.                             | REL-4 |
| >CHOICE mode                       | MP |   |   |   | REL-4 |
| >>FDD                              |    |   |   | (no data)   | REL-4 |
| >>TDD                              |    |   |   |   | REL-4 |
| >>>TFCS Id                         | OP |   | Transport Format Combination Set Identity 10.3.5.21             |   | REL-4 |
| >TFC subset                        | MD |   | Transport<br>Format<br>Combination<br>Subset<br>10.3.5.22       |   | REL-4 |

NOTE: This information element is included within IE "Predefined TrCh configuration".

# 10.3.6 Physical CH Information elements

# 10.3.6.1 AC-to-ASC mapping

| Information Element/Group | Need | Multi   | Type and   | Semantics description        |
|---------------------------|------|---------|------------|------------------------------|
| name                      |      |         | reference  |                              |
| AC-to-ASC mapping table   | MP   | maxASCm |            |                              |
|                           |      | ар      |            |                              |
| >AC-to-ASC mapping        | MP   |         | Integer(07 | Mapping of Access Classes to |
| -                         |      |         | )          | Access Service Classes (see  |
|                           |      |         |            | subclause 8.5.13.)           |

### 10.3.6.2 AICH Info

NOTE: Only for FDD.

| Information Element/Group name | Need | Multi | Type and reference             | Semantics description                          |
|--------------------------------|------|-------|--------------------------------|--|
| Channelisation code            | MP   |       | Integer(025<br>5)              | SF is fixed and equal to 256                   |
| STTD indicator                 | MP   |       | STTD<br>Indicator<br>10.3.6.78 |  |
| AICH transmission timing       | MP   |       | Enumerated (0, 1)              | See parameter AICH_Transmission_Timing in [26] |

### 10.3.6.3 AICH Power offset

NOTE: Only for FDD.

This parameter is used to indicate the power level of AICH channel. This is the power per transmitted Acquisition Indicator minus power of the Primary CPICH.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| AICH Power offset              | MP   |       | Integer(-<br>22+5) | Offset in dB          |

## 10.3.6.4 Allocation period info

NOTE: Only for TDD.

Parameters used by UE to determine period of shared channel allocation.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description                             |
|--------------------------------|------|-------|--------------------|---|
| Allocation Activation Time     | MP   |       | Integer<br>(0255)  | Start the allocation period at the given CFN.     |
| Allocation Duration            | MP   |       | Integer<br>(1256)  | Total number of frames for the allocation period. |

## 10.3.6.5 Alpha

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Alpha Value                    | MP   |       | Enumerated(        |                       |
|                                |      |       | 0, 1/8, 2/8,       |                       |
|                                |      |       | 3/8, 4/8, 5/8,     |                       |
|                                |      |       | 6/8, 7/8, 1)       |                       |

## 10.3.6.6 ASC setting

| Information Element/Group       | Need | Multi | Type and      | Semantics       | Version |
|---------------------------------|------|-------|---------------|-----------------|---------|
| name                            |      |       | reference     | description     |         |
| CHOICE mode                     | MP   |       |               |                 |         |
| >FDD                            |      |       |               |                 |         |
| >>Available signature Start     | MP   |       | Integer(015   |                 |         |
| Index                           |      |       | )             |                 |         |
| >>Available signature End Index | MP   |       | Integer(015   |                 |         |
|                                 |      |       | )             |                 |         |
| >>Assigned Sub-Channel          | MP   |       | Bit string(4) | This IE defines |         |

| Information Element/Group name            | Need | Multi | Type and reference | Semantics description  | Version |
|---|------|-------|--------------------|--|---------|
| Number                                    |      |       |                    | the subchannel assignment as specified in 8.6.6.29. The first/leftmost bit of the bit string contains the most significant bit of the Assigned Sub-  |         |
| >TDD                                      |      |       |                    | Channel Number   |         |
| >>CHOICE TDD option                       | MP   |       |                    |  | REL-4   |
| >>>3.84 Mcps TDD                          | 1711 |       |                    |  | REL-4   |
| >>>Available Channelisation codes indices | MD   |       | Bit string(8)      | Each bit indicates availability of a channelisation code index, where the channelisation code indices are numbered "channelisation code index 0" to "channelisation code index 7". The value 1 of a bit indicates that the channelisation code index is available for the ASC this IE is associated to. The value 0 of a bit indicates that the channelisation code index is not available for the ASC this IE is associated to. Default is that all channelisation codes defined in PRACH Info are available. |         |
| >>>7.68 Mcps TDD                          |      |       |                    |  | REL-7   |
| >>>Available Channelisation codes indices | MD   |       | Bit string(16)     | Each bit indicates availability of a channelisation code index, where the channelisation code indices are numbered "channelisation code index 0" to "channelisation code index 15". The value 1 of a bit indicates that the channelisation code index is available for the ASC this IE is associated to. The value 0 of a bit indicates that the channelisation code index is available for the ASC this IE is associated to. The value 0 of a bit indicates that the channelisation code index is not         | REL-7   |

| Information Element/Group                           | Need  | Multi | Type and                          | Semantics   | Version     |
|---|-------|-------|-----------------------------------|---|-------------|
| >>>1.28 Mcps TDD >>>Available SYNC_UL codes indices | MD    | Multi | Type and reference  Bit string(8) | Semantics description available for the ASC this IE is associated to. Default is that all channelisation codes defined in PRACH Info are available.  Each bit indicates availability of a SYNC_UL code index, where the SYNC_UL code indices are numbered "SYNC_UL code index 0" to "SYNC_UL code index 7". The value 1 of a bit indicates that the SYNC_UL code index is available for the ASC this IE is associated to. The value 0 of a bit indicates that the SYNC_UL code index is not available for the ASC this IE is associated to. | REL-4 REL-4 |
|   |       |       |                                   | Default is that all SYNC_UL codes defined in SYNC_UL Info are available.  |             |
| >>CHOICE subchannel size                            | MP    |       |                                   |   |             |
| >>>Size1  |       |       |                                   |   |             |
| >>>Available Subchannels                            | MP    |       | null                              | Indicates that all Subchannels are available  |             |
| >>>Size2  | MD    |       | Dit -t-i (0)                      | NOTE  |             |
| >>>Available Subchannels >>>Size4                   | MD    |       | Bit string (2)                    | NOTE  |             |
| >>>Available Subchannels                            | MD    |       | Bit string (4)                    | NOTE  |             |
| >>>Size8  |       |       |                                   | .,0.2   |             |
| >>>Available Subchannels                            | MD    |       | Bit string (8)                    | NOTE  |             |
| >>>Size16   | .,,,, |       |                                   |   |             |
| >>>Available Subchannels                            | MD    |       | Bit string (16)                   | NOTE  |             |

NOTE: Each bit indicates availability of a subchannel, where the subchannels are numbered subchannel 0, subchannel 1 etc. The value 1 of a bit indicates that the subchannel is available for the ASC this IE is associated with. The value 0 of a bit indicates that the subchannel is not available for the ASC this IE is associated with. Default value of the IE is that all subchannels within the size are available for the ASC this IE is associated with.

## 10.3.6.7 Void

# 10.3.6.8 CCTrCH power control info

Parameters used by UE to set the SIR target value for uplink open loop power control in TDD.

| Information Element/Group name | Need | Multi | Type and Reference                                  | Semantics description                             |
|--------------------------------|------|-------|---|---|
| TFCS Identity                  | OP   |       | Transport Format Combination Set Identity 10.3.5.21 | TFCS Identity of this CCTrCH. Default value is 1. |
| Uplink DPCH power control info | MP   |       | Uplink<br>DPCH power<br>control info<br>10.3.6.91   |   |

# 10.3.6.8a Cell and Channel Identity info

NOTE: Only for TDD.

| Information Element/Group name | Need | Multi | Type and Reference                | Semantics description   |
|--------------------------------|------|-------|-----------------------------------|---|
| Burst type                     | MP   |       | Enumerated<br>(Type1,<br>Type2)   | Identifies the channel in combination with the Midamble shift and slot number. It is not used in 1.28 Mcps TDD and may be set to either value. This IE should be ignored by the receiver. |
| Midamble Shift                 | MP   |       | Integer<br>(015)                  |   |
| Time Slot                      | MP   |       | Timeslot<br>number<br>10.3.6.84   | This IE is present only if no IPDL scheme is configured in the reference cell. Otherwise the slot is defined by the IPDL configuration.   |
| Cell parameters ID             | MP   |       | Cell<br>parameters<br>ID 10.3.6.9 | Identifies the cell   |

# 10.3.6.9 Cell parameters Id

| Information Element/Group name | Need | Multi | Type and<br>Reference | Semantics description |
|--------------------------------|------|-------|-----------------------|-----------------------|
| Cell parameter Id              | MP   |       | Integer(012           |                       |
|                                |      |       | 7)                    |                       |

### 10.3.6.10 Common timeslot info

| Information Element/Group name    | Need | Multi | Type and reference                 | Semantics description   |
|-----------------------------------|------|-------|------------------------------------|---|
| 2 <sup>nd</sup> interleaving mode | MD   |       | Enumerated(<br>Frame,<br>Timeslot) | Frame timeslot related interleaving. Default value is "Frame"   |
| TFCI coding                       | MD   |       | Integer(4,8,1<br>6,32)             | Describes the amount of bits for the TFCI bits code word as described in [31]. Defaults is no TFCI bit: In case of 8 PSK in 1.28Mcps TDD: 4 corresponds to 6 TFCI code word bits. |

| Information Element/Group name | Need | Multi | Type and reference                    | Semantics description  |
|--------------------------------|------|-------|---------------------------------------|--|
|                                |      |       |                                       | 8 corresponds to 12 TFCI code word bits. 16 corresponds to 24 TFCI code word bits. 32 corresponds to 48 TFCI code word bits. |
| Puncturing limit               | MP   |       | Real(0.401.<br>0 by step of<br>0.04)  |  |
| Repetition period              | MD   |       | Integer(1,<br>2,4,8,16,32,6<br>4)     | Default is continuous allocation. Value 1 indicate continuous  |
| Repetition length              | MP   |       | Integer(1<br>Repetition<br>period –1) | NOTE: This is empty if repetition period is set to 1.  |

### 10.3.6.10a Common timeslot info MBMS

| Information Element/Group name    | Need | Multi | Type and reference                   | Semantics description   |
|-----------------------------------|------|-------|--------------------------------------|---|
| 2 <sup>nd</sup> interleaving mode | MD   |       | Enumerated(<br>Frame,<br>Timeslot)   | Frame timeslot related interleaving. Default value is "Frame"   |
| TFCI coding                       | MD   |       | Integer(4,8,1<br>6,32)               | Describes the amount of bits for the TFCI bits code word as described in [31].  Defaults is no TFCI bit: In case of 8 PSK in 1.28Mcps TDD: 4 corresponds to 6 TFCI code word bits. 8 corresponds to 12 TFCI code word bits. 16 corresponds to 24 TFCI code word bits. 32 corresponds to 48 TFCI code word bits. |
| Puncturing limit                  | MP   |       | Real(0.401.<br>0 by step of<br>0.04) |   |

### 10.3.6.11 Constant value

NOTE: Only for FDD.

This constant value is used by the UE to calculate the initial output power on PRACH according to the Open loop power control procedure.

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description |
|--------------------------------|------|-------|---------------------|-----------------------|
| Constant value                 | MP   |       | Integer (-<br>3510) | In dB                 |

### 10.3.6.11a Constant value TDD

NOTE: Only for 3.84 Mcps TDD and 7.68 Mcps TDD.

3.84 Mcps TDD and 7.68 Mcps TDD constant values are used for open loop power control of PRACH, USCH, HS-SICH and UL DPCH as defined in subclause 8.5.7.

| Information Element/Group | Need | Multi | Type and   | Semantics description |
|---------------------------|------|-------|------------|-----------------------|
| name                      |      |       | reference  |                       |
| TDD Constant value        | MP   |       | Integer (- | In dB                 |
|                           |      |       | 35+10)     |                       |

10.3.6.12 Void

10.3.6.13 Void

10.3.6.14 Void

10.3.6.15 Void

#### 10.3.6.16 Default DPCH Offset Value

Indicates the default offset value within interleaving size at a resolution of 512chip (1/5 slot) in FDD and a resolution of one frame in TDD to offset CFN in the UE. This is used to distribute discontinuous transmission periods in time and also to distribute NodeB-RNC transmission traffics in time. Even though the CFN is offset by DOFF, the start timing of the interleaving will be the timing that "CFN mod (interleaving size)"=0 (e.g. interleaving size: 2,4,8) in both UE and SRNC.

| Information Element/Group name     | Need | Multi | Type and reference                        | Semantics description                                      |
|------------------------------------|------|-------|---|--|
| CHOICE mode                        |      |       |   |  |
| >FDD                               |      |       |   |  |
| >>Default DPCH Offset Value (DOFF) | MP   |       | Integer<br>(0306688<br>by step of<br>512) | Number of chips=.<br>0 to 599 time 512 chips, see<br>[10]. |
| >TDD                               |      |       |   |  |
| >>Default DPCH Offset Value (DOFF) | MP   |       | Integer(07)                               | Number of frames; See [10]                                 |

#### 10.3.6.17 Downlink channelisation codes

NOTE: Only for 1.28 Mcps TDD and 3.84 Mcps TDD.

| Information Element/Group name | Need | Multi | Type and reference                    | Semantics description   |
|--------------------------------|------|-------|---------------------------------------|---|
| CHOICE codes representation    | MP   |       |                                       |   |
| >Consecutive codes             |      |       |                                       |   |
| >>First channelisation code    | MP   |       | Enumerated ( (16/1)(16/1 6))          | If a TFCI exists in this timeslot, it is mapped to the channelisation code as defined in [30].  |
| >>Last channelisation code     | MP   |       | Enumerated<br>(<br>(16/1)(16/1<br>6)) | If this is the same as First channelisation code, only one code is used by the physical layer.  |
| >Bitmap                        |      |       |                                       |   |
| >>Channelisation codes bitmap  | MP   |       | Bit string(16)                        | Each bit indicates the availability of a channelisation code for SF16, where the channelisation codes are numbered as channelisation code 1 (SF16) to channelisation code 16 (SF16). (For SF 16, a 1 in the bitmap means that the corresponding code is used, a 0 means that the corresponding code is not used.)  If all bits are set to zero, SF 1 shall be used.  For dedicated MBSFN frequency timeslot, if the first half in the bit pattern is set to 10101010000000000, the first channelisation code with SF 2 shall be used; if the second half of bit pattern is set to 0000000010101010, the second channelisation code with SF 2 shall be used; if all bits are set to 101010101010101010, both the first and second channelisation codes with SF2 shall be used. |

## 10.3.6.17a Downlink channelisation codes VHCR

NOTE: Only for 7.68 Mcps TDD VHCR

| Information Element/Group name | Need | Multi | Type and reference           | Semantics description  | Version |
|--------------------------------|------|-------|------------------------------|--|---------|
| CHOICE codes representation    | MP   |       |                              |  | REL-7   |
| >Consecutive codes             |      |       |                              |  | REL-7   |
| >>First channelisation code    | MP   |       | Enumerated ( (32/1)(32/3 2)) | If a TFCI exists in this timeslot, it is mapped to the channelisation code as defined in [30].   | REL-7   |
| >>Last channelisation code     | MP   |       | Enumerated ( (32/1)(32/3 2)) | If this is the same as First channelisation code, only one code is used by the physical layer.   | REL-7   |
| >Bitmap                        |      |       |                              |  | REL-7   |
| >>Channelisation codes bitmap  | MP   |       | Bit string(32)               | Each bit indicates the availability of a channelisation code for SF32, where the channelisation codes are numbered as channelisation code 1 (SF32) to channelisation code 32 (SF32). (For SF 32, a 1 in the bitmap means that the corresponding code is used, a 0 means that the corresponding code is not used.) If all bits are set to zero, SF 1 shall be used. | REL-7   |

## 10.3.6.18 Downlink DPCH info common for all RL

| Information               | Need   | Multi | Type and     | Semantics description                           | Version |
|---------------------------|--------|-------|--------------|---|---------|
| Element/Group name        |        |       | reference    |   |         |
| Timing Indication         | MP     |       | Enumerat     | NOTE  |         |
|                           |        |       | ed(Initialis |   |         |
|                           |        |       | e,           |   |         |
|                           |        |       | Maintain)    |   |         |
| Timing maintained         | CV-    |       | Enumerat     | FALSE indicates that                            | REL-6   |
| Synchronization indicator | Synch  |       | ed           | no synchronisation                              |         |
|                           |        |       | (false)      | procedure shall be                              |         |
|                           |        |       |              | performed for timing                            |         |
|                           |        |       |              | maintained inter-                               |         |
|                           |        |       |              | frequency hard                                  |         |
|                           |        |       |              | handover [29]. Absence                          |         |
|                           |        |       |              | of this element means                           |         |
|                           |        |       |              | that the synchronization procedure A shall be   |         |
|                           |        |       |              | used.   |         |
| Downlink DPCH power       | OP     |       | Downlink     | useu.   |         |
| control information       |        |       | DPCH         |   |         |
| Control information       |        |       | power        |   |         |
|                           |        |       | control      |   |         |
|                           |        |       | informatio   |   |         |
|                           |        |       | n            |   |         |
|                           |        |       | 10.3.6.23    |   |         |
| MAC-d HFN initial value   | CV-    |       | Bit          |   | REL-4   |
|                           | Messag |       | string(24)   |   |         |
|                           | е      |       | ,            |   |         |
| CHOICE mode               | MP     |       |              |   |         |
| >FDD                      |        |       |              |   |         |
| >>Power offset P Pilot-   | MP     |       | Integer(0    | Power offset equals                             |         |
| DPDCH                     |        |       | 24)          | P <sub>Pilot</sub> - P <sub>DPDCH</sub> , range |         |
|                           |        |       |              | 06 dB, in steps of 0.25                         |         |
|                           |        |       |              | dB  |         |
| >>Downlink rate           | OP     |       | Downlink     | If this IE is set to                            |         |
| matching restriction      |        |       | rate         | "absent", no Transport                          |         |
| information               |        |       | matching     | CH is restricted in TFI.                        |         |
|                           |        |       | restriction  |   |         |
|                           |        |       | informatio   |   |         |

| Information            | Need | Multi | Type and   | Semantics description                          | Version |
|------------------------|------|-------|------------|--|---------|
| Element/Group name     |      |       | reference  | Comando docompuen                              | 70.0.0  |
|                        |      |       | n          |  |         |
|                        |      |       | 10.3.6.31  |  |         |
| >>Spreading factor     | MP   |       | Integer(4, |  |         |
|                        |      |       | 8, 16, 32, |  |         |
|                        |      |       | 64, 128,   |  |         |
|                        |      |       | 256, 512)  |  |         |
| >>Fixed or Flexible    | MP   |       | Enumerat   |  |         |
| Position               |      |       | ed (Fixed, |  |         |
| >>TFCI existence       | MP   |       | Flexible)  | TRUE indicates that                            |         |
| >>TFCI existence       | IMP  |       | Boolean    | TFCI is used. When                             |         |
|                        |      |       |            | spreading factor is less                       |         |
|                        |      |       |            | than or equal to 64,                           |         |
|                        |      |       |            | FALSE indicates that                           |         |
|                        |      |       |            | TFCI is not used and                           |         |
|                        |      |       |            | therefore DTX is used                          |         |
|                        |      |       |            | in the TFCI field.                             |         |
| >>CHOICE SF            | MP   |       |            |  |         |
| >>>SF = 256            |      |       |            |  |         |
| >>>>Number of bits for | MP   |       | Integer    | In bits  |         |
| Pilot bits             |      |       | (2,4,8)    |  |         |
| >>>SF = 128            | L    |       |            |  |         |
| >>>>Number of bits for | MP   |       | Integer(4, | In bits  |         |
| Pilot bits             | 1    |       | 8)         | (  |         |
| >>>Otherwise           |      |       |            | (no data). In ASN.1                            |         |
|                        |      |       |            | choice "Otherwise" is not explicitly available |         |
|                        |      |       |            | as all values are                              |         |
|                        |      |       |            | available, it is implied                       |         |
|                        |      |       |            | by the use of any value                        |         |
|                        |      |       |            | other than 128 or 256.                         |         |
| >TDD                   |      |       |            | (no data)                                      |         |

| CHOICE SF | Condition under which the given SF is chosen           |  |
|-----------|--|--|
| SF=128    | "Spreading factor" is set to 128                       |  |
| SF=256    | "Spreading factor" is set to 256                       |  |
| Otherwise | "Spreading factor" is set to a value distinct from 128 |  |
|           | and 256  |  |

| Condition | Explanation  |
|-----------|--|
| Message   | This IE is not needed if the IE "Downlink DPCH info common for all RL" is included in RRC CONNECTION SETUP or HANDOVER TO UTRAN COMMAND messages. Otherwise it is optional.  |
| Synch     | The IE is not needed in the CELL UPDATE CONFIRM, HANDOVER TO UTRAN COMMAND and the RRC CONNECTION SETUP messages or if the IE "Timing Indication" is set to "Initialise" or if the IE "Frequency Info" is not included. Otherwise, it is optional. |

NOTE: Within the HANDOVER TO UTRAN COMMAND message, only value "initialise" is applicable.

### 10.3.6.19 Downlink DPCH info common for all RL Post

| Information Element/Group   | Need | Multi | Type and    | Semantics description |
|-----------------------------|------|-------|-------------|-----------------------|
| name                        |      |       | reference   |                       |
| Downlink DPCH power control | OP   |       | Downlink    |                       |
| information                 |      |       | DPCH power  |                       |
|                             |      |       | control     |                       |
|                             |      |       | information |                       |
|                             |      |       | 10.3.6.23   |                       |

### 10.3.6.20 Downlink DPCH info common for all RL Pre

| Information Element/Group name   | Need | Multi | Type and reference                                | Semantics description   |
|----------------------------------|------|-------|---|---|
| CHOICE mode                      | MP   |       |   |   |
| >FDD                             |      |       |   |   |
| >>Spreading factor               | MP   |       | Integer(4, 8,<br>16, 32, 64,<br>128, 256,<br>512) | Defined in CHOICE SF512-<br>Andpilot with "number of its for<br>pilot bits" in ASN.1  |
| >>Fixed or Flexible Position     | MP   |       | Enumerated (Fixed, Flexible)                      |   |
| >>TFCI existence                 | MP   |       | Boolean   | TRUE indicates that TFCI is used. When spreading factor is less than or equal to 64, FALSE indicates that TFCI is not used and therefore DTX is used in the TFCI field. |
| >>CHOICE SF                      | MP   |       |   |   |
| >>>SF = 256                      |      |       |   |   |
| >>>Number of bits for Pilot bits | MP   |       | Integer<br>(2,4,8)                                | In bits   |
| >>>SF = 128                      |      |       |   |   |
| >>>Number of bits for Pilot bits | MP   |       | Integer(4,8)                                      | In bits   |
| >>>Otherwise                     |      |       |   | (no data)   |
| >TDD                             |      |       |   | ,   |
| >>Common timeslot info           | MP   |       | Common<br>Timeslot Info<br>10.3.6.10              |   |

| CHOICE SF | Condition under which the given SF is chosen           |
|-----------|--|
| SF=128    | "Spreading factor" is set to 128                       |
| SF=256    | "Spreading factor" is set to 256                       |
| Otherwise | "Spreading factor" is set to a value distinct from 128 |
|           | and 256  |

## 10.3.6.21 Downlink DPCH info for each RL

| Information Element/Group name               | Need | Multi | Type and reference  | Semantics description                   | Version |
|--|------|-------|---|---|---------|
| CHOICE mode                                  | MP   |       |   |   |         |
| >FDD   |      |       |   |   |         |
| >>Primary CPICH usage for channel estimation | MP   |       | Primary<br>CPICH<br>usage for<br>channel<br>estimation<br>10.3.6.62 |   |         |
| >>DPCH frame offset                          | MP   |       | Integer(0<br>38144 by   | Offset (in number of chips) between the |         |

| Information                              | Need                        | Multi  | Type and  | Semantics description  | Version |
|--|-----------------------------|--|---|--|---------|
| Element/Group name                       | 11000                       |  | reference   | -  |         |
|  |                             |  | step of<br>256)                                       | beginning of the P-<br>CCPCH frame and the<br>beginning of the DPCH<br>frame<br>This is called $\tau_{DPCH,n}$ in  |         |
|  |                             |  |   | [26]   |         |
| >>Secondary CPICH info                   | OP                          |  | Secondar<br>y CPICH<br>info<br>10.3.6.73              |  |         |
| >>DL channelisation code                 | MP                          | 1 to<br><maxdp<br>CH-<br/>DLchan<br/>&gt;</maxdp<br> |   | For the purpose of physical channel mapping [27] the DPCHs are numbered, starting from DPCH number 1, according to the order that they are contained in this IE. |         |
| >>>Secondary scrambling code             | MD                          |  | Secondar<br>y<br>scramblin<br>g code<br>10.3.6.74     | Default is the same<br>scrambling code as for<br>the Primary CPICH   |         |
| >>>Spreading factor                      | MP                          |  | Integer(4,<br>8, 16, 32,<br>64, 128,<br>256, 512)     | Defined in CHOICE<br>SF512-<br>AndCodenumber with<br>"code number" in<br>ASN.1   |         |
| >>>Code number                           | MP                          |  | Integer(0<br>Spreading<br>factor - 1)                 |  |         |
| >>>Scrambling code change                | CH-SF/2                     |  | Enumerat<br>ed (code<br>change,<br>no code<br>change) | Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.   |         |
| >>TPC combination index                  | MP                          |  | TPC combinati on index 10.3.6.85                      |  |         |
| >>Power offset P <sub>TPC</sub> .  DPDCH | OP                          |  | Integer<br>(024)                                      | Power offset equals PTPC- PDPDCH, range 06 dB, in steps of 0.25 dB   | REL-5   |
| >>Closed loop timing adjustment mode     | CH-<br>TxDivers<br>ity Mode |  | Integer(1,<br>2)                                      | It is present if Tx Diversity is used in the radio link.   |         |
| >1.28 Mcps TDD or 3.84<br>Mcps TDD       |                             |  |   |  |         |
| >>DL CCTrCh List                         | OP                          | 1 <max<br>CCTrCH<br/>&gt;</max<br>                   |   | DL physical channels to establish or reconfigure list.   |         |
| >>>TFCS ID                               | MD                          |  | Integer(1<br>8)                                       | Identity of this CCTrCh. Default value is 1  |         |
| >>>Time info                             | MP                          |  | Time Info<br>10.3.6.83                                |  |         |
| >>>Common timeslot info                  | MD                          |  | Common<br>Timeslot<br>Info<br>10.3.6.10               | Default is the current<br>Common timeslot info   |         |
| >>>Downlink DPCH timeslots and codes     | MD                          |  | Downlink<br>Timeslots<br>and<br>Codes<br>10.3.6.32    | Default is to use the old timeslots and codes.   |         |
| >>>UL CCTrCH TPC List                    | MD                          | 0 <max<br>CCTrCH</max<br>                            |   | UL CCTrCH identities for TPC commands  |         |

| Information<br>Element/Group name               | Need | Multi                              | Type and reference  | Semantics description   | Version |
|---|------|------------------------------------|---|---|---------|
|   |      | >                                  |   | associated with this DL CCTrCH. Default is previous list or all defined UL CCTrCHs. This list is not required for 1.28 Mcps TDD and is to be ignored by the UE.                                       |         |
| >>>>UL TPC TFCS Identity                        | MP   |                                    | Transport<br>Format<br>Combinati<br>on Set<br>Identity<br>10.3.5.21 |   |         |
| >>DL CCTrCH List to<br>Remove                   | OP   | 1 <max<br>CCTrCH<br/>&gt;</max<br> |   | DL physical channels to remove list.  |         |
| >>>TFCS ID                                      | MP   |                                    | Integer(1<br>8)   |   |         |
| >7.68 Mcps TDD                                  |      |                                    |   |   | REL-7   |
| >>DL CCTrCh List                                | OP   | 1 <max<br>CCTrCH<br/>&gt;</max<br> |   | DL physical channels to establish or reconfigure list.  | REL-7   |
| >>>TFCS ID                                      | MD   |                                    | Integer(1<br>8)   | Identity of this CCTrCh. Default value is 1   | REL-7   |
| >>>Time info                                    | MP   |                                    | Time Info<br>10.3.6.83  |   | REL-7   |
| >>>Common timeslot info                         | MD   |                                    | Common<br>Timeslot<br>Info<br>10.3.6.10                             | Default is the current<br>Common timeslot info  | REL-7   |
| >>>Downlink DPCH<br>timeslots and codes<br>VHCR | MD   |                                    | Downlink<br>Timeslots<br>and<br>Codes<br>VHCR<br>10.3.6.32          | Default is to use the old timeslots and codes.  | REL-7   |
| >>>UL CCTrCH TPC List                           | MD   | 0 <max<br>CCTrCH<br/>&gt;</max<br> |   | UL CCTrCH identities for TPC commands associated with this DL CCTrCH. Default is previous list or all defined UL CCTrCHs. This list is not required for 1.28 Mcps TDD and is to be ignored by the UE. | REL-7   |
| >>>UL TPC TFCS Identity                         | MP   |                                    | Transport<br>Format<br>Combinati<br>on Set<br>Identity<br>10.3.5.21 |   | REL-7   |
| >>DL CCTrCH List to<br>Remove                   | OP   | 1 <max<br>CCTrCH</max<br>          |   | DL physical channels to remove list.  | REL-7   |
| >>>TFCS ID                                      | MP   |                                    | Integer(1<br>8)   |   | REL-7   |

| Condition        | Explanation  |
|------------------|--|
| SF/2             | The information element is mandatory present if the UE has a compressed mode pattern sequence configured in variable TGPS_IDENTITY or included in the message including IE "Downlink DPCH info for each RL", which is using compressed mode method "SF/2". Otherwise the IE is not needed. |
| TxDiversity Mode | This IE is mandatory present if any TX Diversity Mode is used on the radio link, i.e. if STTD or "closed loop mode 1" is used on the radio link. Otherwise the IE is not needed.   |

# 10.3.6.22 Downlink DPCH info for each RL Post

| Information Element/Group name               | Need             | Multi | Type and reference  | Semantics description  |
|--|------------------|-------|---|--|
| CHOICE mode                                  | MP               |       |   |  |
| >FDD   |                  |       |   |  |
| >>Primary CPICH usage for channel estimation | MP               |       | Primary<br>CPICH<br>usage for<br>channel<br>estimation<br>10.3.6.62 |  |
| >>Secondary scrambling code                  | MD               |       | Secondary<br>scrambling<br>code<br>10.3.6.74                        | Default is the same scrambling code as for the Primary CPICH                                 |
| >>CHOICE Spreading factor                    | MP               |       | Integer(4, 8, 16, 32, 64, 128, 256, 512)                            | Defined in CHOICE SF512-<br>AndCodenumber with "code<br>number" in ASN.1                     |
| >>Code number                                | MP               |       | Integer(0<br>Spreading<br>factor - 1)                               |  |
| >>Scrambling code change                     | CH- <i>SF/</i> 2 |       | Enumerated<br>(code<br>change, no<br>code<br>change)                | Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'. |
| >>TPC combination index                      | MP               |       | TPC combination index 10.3.6.85                                     |  |
| >1.28 Mcps TDD or 3.84 Mcps<br>TDD           |                  |       |   |  |
| >>Downlink DPCH timeslots and codes          | MP               |       | Downlink<br>Timeslots<br>and Codes<br>10.3.6.32                     |  |
| >7.68 Mcps TDD                               |                  |       |   | REL-7  |
| >>Downlink DPCH timeslots and codes VHCR     | MP               |       | Downlink<br>Timeslots<br>and Codes<br>VHCR<br>10.3.6.32a            | REL-7  |

| Condition | Explanation   |
|-----------|---|
| SF/2      | The information element is mandatory present if the |
|           | UE has a compressed mode pattern sequence           |
|           | configured in variable TGPS_IDENTITY or included in |
|           | the message including IE "Downlink DPCH info for    |
|           | each RL Post", which is using compressed mode       |
|           | method "SF/2". Otherwise the IE is not needed.      |

## 10.3.6.23 Downlink DPCH power control information

| Information Element/Group name | Need | Multi | Type and reference                                    | Semantics description   |
|--------------------------------|------|-------|---|---|
| CHOICE mode                    | MP   |       |   |   |
| >FDD                           |      |       |   |   |
| >>DPC Mode                     | MP   |       | Enumerated<br>(Single TPC,<br>TPC triplet in<br>soft) | "Single TPC" is DPC_Mode=0<br>and "TPC triplet in soft" is<br>DPC_mode=1 in [29]. |
| >TDD                           |      |       |   |   |
| >>TPC Step Size                | OP   |       | Integer<br>(1, 2, 3)                                  | In dB   |

#### 10.3.6.23oa Downlink F-DPCH info common for all RL

NOTE: For FDD only.

| Information<br>Element/Group<br>name              | Need         | Multi | Type and reference                                      | Semantics<br>description   | Version |
|---|--------------|-------|---|--|---------|
| Timing Indication                                 | MP           |       | Enumerated (Initialise, Maintain)                       |  | REL-6   |
| Timing maintained<br>Synchronization<br>indicator | CV-<br>Synch |       | Enumerated<br>(false)                                   | FALSE indicates that no synchronisation procedure shall be performed for timing maintained intra- and interfrequency hard handover [29]. Absence of this element means that the synchronization procedure A shall be used. | REL-6   |
| Downlink F-DPCH power control information         | OP           |       | Downlink DPCH<br>power control<br>information 10.3.6.23 |  | REL-6   |
| TPC command error rate target                     | MP           |       | Real (0.010.1 by step of 0.01)                          |  | REL-6   |

| Condition | Explanation                                    |
|-----------|--|
| Synch     | The IE is not needed in the CELL UPDATE        |
|           | CONFIRM, HANDOVER TO UTRAN COMMAND and         |
|           | the RRC CONNECTION SETUP messages or if the    |
|           | IE "Timing Indication" is set to "Initialise". |
|           | Otherwise, it is optional.                     |

## 10.3.6.23ob Downlink F-DPCH info for each RL

NOTE: For FDD only.

| Information<br>Element/Group<br>name       | Need | Multi | Type and reference                                   | Semantics<br>description | Version |
|--|------|-------|--|--------------------------|---------|
| Primary CPICH usage for channel estimation | MP   |       | Primary CPICH usage for channel estimation 10.3.6.62 |                          | REL-6   |
| F-DPCH frame                               | MP   |       | Integer (038144                                      | Offset (in               | REL-6   |

| Information<br>Element/Group<br>name | Need               | Multi | Type and reference                        | Semantics description   | Version |
|--------------------------------------|--------------------|-------|---|---|---------|
| offset                               |                    |       | by step of 256)                           | number of chips) between the beginning of the P-CCPCH frame and the beginning of the F-DPCH frame This is called TF-DPCH, in [26] |         |
| F-DPCH slot<br>format                | OP                 |       | Integer (09 by<br>steps of 1)             | Slot format<br>used by F-<br>DPCH in [26].<br>Absence of this<br>element means<br>that slot format<br>0 is applied.               | REL-7   |
| Secondary<br>CPICH info              | OP                 |       | Secondary CPICH info 10.3.6.73            |   | REL-6   |
| Secondary<br>scrambling<br>code      | MD                 |       | Secondary<br>scrambling code<br>10.3.6.74 | Default is the same scrambling code as for the Primary CPICH  | REL-6   |
| Code number                          | MP                 |       | Integer (0255)                            |   | REL-6   |
| TPC combination index                | MP                 |       | TPC combination index 10.3.6.85           |   | REL-6   |
| STTD indication                      | CV-<br>NoHOtoUTRAN |       | Enumerated (true)                         | This IE shall be set to TRUE when STTD is used. Absence of this element means STTD is not used.                                   | REL-6   |

| Condition   | Explanation  |
|-------------|--|
| NoHOtoUTRAN | This IE is not needed in the HANDOVER TO UTRAN     |
|             | COMMAND and it is optional in all the other        |
|             | messages in which the IE "Downlink F-DPCH info for |
|             | each RL" can be included.                          |

#### 10.3.6.23a Downlink HS-PDSCH Information

| Information Element/Group name          | Need            | Multi | Type and reference  | Semantics description  | Version |
|---|-----------------|-------|---|--|---------|
| HS-SCCH Info                            | OP              |       | HS-SCCH<br>Info<br>10.3.6.36a                                 | For 1.28 Mcps TDD, if IE DL Multi-Carrier Information is present, ignore this IE.  | REL-5   |
| Measurement Feedback Info               | OP              |       | Measuremen<br>t Feedback<br>Info<br>10.3.6.40a                |  | REL-5   |
| CHOICE mode                             | MP              |       |   |  | REL-5   |
| >TDD                                    |                 |       |   |  |         |
| >>CHOICE TDD option                     | MP              |       |   |  | REL-5   |
| >>>3.84 Mcps                            |                 |       |   |  |         |
| >>>HS-PDSCH Timeslot Configuration      | OP              |       | HS-PDSCH<br>Timeslot<br>Configuratio<br>n 10.3.6.360          |  | REL-5   |
| >>>7.68 Mcps                            |                 |       |   |  | REL-7   |
| >>>HS-PDSCH Timeslot Configuration VHCR | OP              |       | HS-PDSCH<br>Timeslot<br>Configuratio<br>n VHCR<br>10.3.6.360a |  | REL-7   |
| >>> 1.28 Mcps                           |                 |       |   |  |         |
| >>>> HS-PDSCH Midamble Configuration    | OP              |       | HS-PDSCH<br>Midamble<br>Configuratio<br>n<br>10.3.6.3600      | For 1.28 Mcps<br>TDD, if IE DL<br>Multi-Carrier<br>Information is<br>present, ignore<br>this IE.   | REL-5   |
| >>>> DL Multi-Carrier Information       | OP              |       | DL Multi-<br>Carrier<br>Information<br>10.3.6.28a             |  | REL-7   |
| >FDD                                    |                 |       |   |  |         |
| >>Downlink 64QAM configured             | OP              |       | Enumerated<br>(TRUE)  | Absence of this IE means that the HS-SCCH does not use the 64QAM format. The presence of this IE means the UE uses the octet aligned table [15]. | REL-7   |
| >>HS-DSCH TB size table                 | CV-<br>Not64QAM |       | Enumerated<br>(octet<br>aligned)                              | If this IE is present, octet aligned table [15] is used, else bit aligned table [15] is used.  | REL-7   |

| Condition | Explanation   |
|-----------|---|
| Not64QAM  | This IE is optionally present if 64QAM is not configured and MAC-ehs is configured. Otherwise it is |
|           | not needed.   |

## 10.3.6.24 Downlink information common for all radio links

| Information Element/Group | Need | Multi | Type and  | Semantics   | Version |
|---------------------------|------|-------|-----------|-------------|---------|
| name                      |      |       | reference | description |         |

| Information Element/Group name             | Need                   | Multi | Type and reference  | Semantics description   | Version |
|--|------------------------|-------|---|---|---------|
| CHOICE DPCH info                           | OP                     |       |   | •   | REL-6   |
| >Downlink DPCH info common for all RL      | MP                     |       | Downlink<br>DPCH info<br>common for<br>all RL<br>10.3.6.18      |   |         |
| >Downlink F-DPCH info<br>common for all RL | MP                     |       | Downlink F-<br>DPCH info<br>common for<br>all RL<br>10.3.6.230a |   | REL-6   |
| CHOICE mode                                | MP                     |       |   |   |         |
| >FDD                                       |                        |       |   |   |         |
| >>DPCH compressed mode info                | OP                     |       | DPCH<br>compressed<br>mode info<br>10.3.6.33                    |   |         |
| >>TX Diversity Mode                        | MD                     |       | TX Diversity<br>Mode<br>10.3.6.86                               | Default value is<br>the existing value<br>of TX Diversity<br>mode   |         |
| >TDD                                       |                        |       |   | (no data)   |         |
| >>CHOICE TDD option                        | MP                     |       |   |   | REL-4   |
| >>>3.84 Mcps TDD                           |                        |       |   | (no data)   | REL-4   |
| >>>7.68 Mcps TDD                           |                        |       |   | (no data)   | REL-7   |
| >>>1.28 Mcps TDD                           |                        |       |   |   | REL-4   |
| >>>TSTD indicator                          | MP                     |       | TSTD indicator 10.3.6.85a                                       |   | REL-4   |
| Default DPCH Offset Value                  | OP                     |       | Default<br>DPCH Offset<br>Value,<br>10.3.6.16                   |   |         |
| MAC-hs reset indicator                     | CV-<br>messageT<br>ype |       | Enumerated (true)   | TRUE Indicates the MAC-hs/ehs entity needs to be reset.   | REL-5   |
| Post-verification period                   | OP                     |       | Enumerated<br>(true)  | TRUE indicates that a post-verification period shall be used [29]. Absence of this element means that a post-verification period shall not be used. | REL-6   |

| Condition   | Explanation                                   |
|-------------|---|
| MessageType | The IE is not needed in the HANDOVER TO UTRAN |
|             | COMMAND and the RRC CONNECTION SETUP          |
|             | messages. Otherwise, it is optional.          |

### 10.3.6.25 Downlink information common for all radio links Post

| Information Element/Group | Need | Multi | Type and    | Semantics description |
|---------------------------|------|-------|-------------|-----------------------|
| name                      |      |       | reference   |                       |
| Downlink DPCH info common | MP   |       | Downlink    |                       |
| for all RL                |      |       | DPCH info   |                       |
|                           |      |       | common for  |                       |
|                           |      |       | all RL Post |                       |
|                           |      |       | 10.3.6.19   |                       |

## 10.3.6.26 Downlink information common for all radio links Pre

| Information Element/Group | Need | Multi | Type and   | Semantics description |
|---------------------------|------|-------|------------|-----------------------|
| name                      |      |       | reference  |                       |
| Downlink DPCH info common | MP   |       | Downlink   |                       |
| for all RL                |      |       | DPCH info  |                       |
|                           |      |       | common for |                       |
|                           |      |       | all RL Pre |                       |
|                           |      |       | 10.3.6.20  |                       |

## 10.3.6.27 Downlink information for each radio link

| Information Element/Group name         | Need | Multi | Type and reference                                     | Semantics description   | Version |
|--|------|-------|--|---|---------|
| CHOICE mode                            | MP   |       |  |   |         |
| >FDD                                   |      |       |  |   |         |
| >>Primary CPICH info                   | MP   |       | Primary<br>CPICH info<br>10.3.6.60                     |   |         |
| >>Cell ID                              | OP   |       | Cell ID<br>10.3.2.2                                    |   | REL-4   |
| >>Serving HS-DSCH radio link indicator | MP   |       | Boolean  | The value TRUE indicates that this radio link is the serving HS-DSCH radio link | REL-5   |
| >>Serving E-DCH radio link indicator   | MP   |       | Boolean  | The value TRUE indicates that this radio link is the serving E-DCH radio link   | REL-6   |
| >TDD                                   |      |       |  |   |         |
| >>Primary CCPCH info                   | MP   |       | Primary<br>CCPCH info<br>10.3.6.57                     |   |         |
| CHOICE DPCH info                       | OP   |       |  |   | REL-6   |
| >Downlink DPCH info for each RL        | MP   |       | Downlink<br>DPCH info<br>for each RL<br>10.3.6.21      |   |         |
| >Downlink F-DPCH info for each RL      | MP   |       | Downlink F-<br>DPCH info<br>for each RL<br>10.3.6.23ob |   | REL-6   |
| E-AGCH Info                            | OP   |       | E-AGCH Info<br>10.3.6.100                              |   | REL-6   |
| CHOICE mode                            |      |       |  |   | REL-7   |
| >FDD                                   |      |       |  |   | REL-7   |
| >>CHOICE E-HICH Information            | OP   |       |  |   | REL-6   |
| >>>E-HICH Information                  | MP   |       | E-HICH Info<br>10.3.6.101                              |   | REL-6   |
| >>>E-HICH release indicator            |      |       |  | (no data)   | REL-6   |
| >>CHOICE E-RGCH Information            | OP   |       |  |   | REL-6   |
| >>>E-RGCH Information                  | MP   |       | E-RGCH<br>Info<br>10.3.6.102                           |   | REL-6   |
| >>>E-RGCH release indicator            |      |       |  | (no data)   | REL-6   |
| >TDD                                   |      |       |  | (no data)   | REL-7   |
| >>E-HICH Information                   | OP   |       | E-HICH Info<br>10.3.6.101                              |   | REL-7   |

## 10.3.6.28 Downlink information for each radio link Post

| Information Element/Group      | Need | Multi | Type and  | Semantics   | Version |
|--------------------------------|------|-------|---|-------------|---------|
| name                           |      |       | reference   | description |         |
| Choice mode                    | MP   |       |   |             |         |
| >FDD                           |      |       |   |             |         |
| >>Primary CPICH info           | MP   |       | Primary<br>CPICH info<br>10.3.6.60                        |             |         |
| >TDD                           |      |       |   |             |         |
| >>Primary CCPCH info           | MP   |       | Primary<br>CCPCH info<br>post<br>10.3.6.58                |             |         |
| Downlink DPCH info for each RL | MP   |       | Downlink<br>DPCH info<br>for each RL<br>Post<br>10.3.6.22 |             |         |

# 10.3.6.28a DL Multi-Carrier Information (1.28 Mcps TDD only)

| Information Element/Group             | Need  | Multi  | Type and                    | Semantics                          | Version |
|---------------------------------------|-------|--|-----------------------------|------------------------------------|---------|
| name<br>TSN-Length                    | OP    |  | reference<br>Enumerated     | description                        | REL-7   |
| 15N-Length                            | OP    |  | (tsn-6bits,                 |                                    | KEL-/   |
|                                       |       |  | tsn-9bits)                  |                                    |         |
| Multi-Carrier number                  | OP    |  | Integer(1m                  |                                    | REL-7   |
|                                       |       |  | axTDD128C<br>arrier)        |                                    |         |
| DI-HSPDSCH-MultiCarrier-              | OP    | 1 to   | arrier                      | The number of                      | REL-7   |
| Information                           |       | <maxtdd1< td=""><td></td><td>HS-SCCH Sets</td><td></td></maxtdd1<> |                             | HS-SCCH Sets                       |         |
|                                       |       | 28Carrier>   |                             | shall not be larger than UE Multi- |         |
|                                       |       |  |                             | Carrier capability                 |         |
| >Carrier-Uarfcn                       | MP    |  | Integer(016                 |                                    | REL-7   |
| >HARQ Info                            | OP    |  | 383)<br>HARQ info           |                                    | DEL 7   |
| SHARQ INIO                            | UP    |  | 10.3.5.7a                   |                                    | REL-7   |
| >HS-PDSCH Midamble                    | OP    |  | HS-PDSCH                    |                                    | REL-7   |
| Configuration                         |       |  | Midamble                    |                                    |         |
|                                       |       |  | Configuratio<br>n           |                                    |         |
|                                       |       |  | 10.3.6.3600                 |                                    |         |
| >HS-SCCH Set Configuration            | OP    | 1 to   |                             |                                    | REL-7   |
|                                       |       | <maxhs-<br>SCCHs&gt;</maxhs-<br>                                   |                             |                                    |         |
| >>HS-SCCH-Receive-Uarfcn              | MP    | 3001152  | Integer(016                 |                                    | REL-7   |
|                                       |       |  | 383)                        |                                    |         |
| >>Timeslot number                     | MP    |  | Integer                     |                                    | REL-7   |
| >>First Channelisation code           | MP    |  | (06)<br>Enumerated          |                                    | REL-7   |
|                                       |       |  | ((16/1)                     |                                    |         |
|                                       | 1     |  | (16/16))                    |                                    | DE: -   |
| >>Second Channelisation code          | MP    |  | Enumerated ((16/1)          |                                    | REL-7   |
|                                       |       |  | (16/16))                    |                                    |         |
| >>Midamble Allocation mode            | MP    |  | Enumerated                  |                                    | REL-7   |
|                                       |       |  | (Default midamble,          |                                    |         |
|                                       |       |  | Common                      |                                    |         |
|                                       |       |  | midamble,                   |                                    |         |
|                                       |       |  | UE specific midamble)       |                                    |         |
| >>Midamble Shift                      | CV-UE |  | Integer                     |                                    | REL-7   |
|                                       |       |  | (015)                       |                                    |         |
| >>Midamble configuration              | MP    |  | Integer<br>(2, 4, 6, 8,     |                                    | REL-7   |
|                                       |       |  | 10, 12, 14,                 |                                    |         |
|                                       |       |  | 16)                         |                                    |         |
| >>BLER target                         | MP    |  | Real                        | Signalled value is                 | REL-7   |
|                                       |       |  | (-3.150 by<br>step of 0.05) | Log10(HS-SCCH<br>BLER quality      |         |
|                                       |       |  | 0.00                        | target).                           |         |
|                                       |       |  |                             | The UE shall use                   |         |
|                                       |       |  |                             | the BLER target signalled in the   |         |
|                                       |       |  |                             | first occurrence of                |         |
|                                       |       |  |                             | the HS-SCCH Set                    |         |
| >>HS-SICH configuration               |       | +  |                             | Configuration.                     | REL-7   |
| >>Timeslot number                     | MP    |  | Integer                     |                                    | REL-7   |
|                                       |       |  | (06)                        |                                    |         |
| >>>Channelisation code                | MP    |  | Enumerated                  |                                    | REL-7   |
|                                       |       |  | ((16/1)<br>(16/16))         |                                    |         |
| >>>Midamble Allocation mode           | MP    |  | Enumerated                  |                                    | REL-7   |
| · · · · · · · · · · · · · · · · · · · |       |  |                             |                                    |         |

|                           |       | mid<br>UE           | fault<br>amble,<br>specific<br>amble) |                                |
|---------------------------|-------|---------------------|---------------------------------------|--------------------------------|
| >>>Midamble configuration | MP    |                     | ger<br>4, 6, 8,<br>12, 14,            | REL-7                          |
| >>>Midamble Shift         | CV-UE | Inte<br>(0*         | •                                     | REL-7                          |
| >>>Ack-Nack Power Offset  | MP    | Inte<br>(-7<br>of 1 | .8 by step                            | REL-7                          |
| >>>PRX <sub>HS-SICH</sub> | MP    |                     | 3 -                                   | Desired REL-7 r level for ICH. |
| >>>TPC step size          | MP    | Inte<br>(1, 2       | ger dB.<br>2, 3)                      | REL-7                          |

| Condition |    | Explanation   |  |  |
|-----------|----|---|--|--|
| I         | UE | This IE is mandatory present when the value of the IE |  |  |
|           |    | "Midamble Allocation Mode" is "UE specific midamble"  |  |  |
|           |    | and not needed otherwise.                             |  |  |

10.3.6.29 Void

10.3.6.30 Void

## 10.3.6.31 Downlink rate matching restriction information

This IE indicates which TrCH is restricted in TFI.

| Information Element/Group name   | Need | Multi                                 | Type and reference                            | Semantics description |
|----------------------------------|------|---------------------------------------|---|-----------------------|
| Restricted TrCH information      | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |   |                       |
| >Downlink transport channel type | MP   |                                       | Enumerated(<br>DCH)                           |                       |
| >Restricted DL TrCH identity     | MP   |                                       | Transport<br>channel<br>identity<br>10.3.5.18 |                       |
| >Allowed TFIs                    | MP   | 1 to<br><maxtf></maxtf>               |   |                       |
| >>Allowed TFI                    | MP   |                                       | Integer(031                                   |                       |

### 10.3.6.32 Downlink Timeslots and Codes

NOTE: Only for 1.28 Mcps TDD and 3.84 Mcps TDD.

| Information Element/Group      | Need | Multi | Type and                                 | Semantics description   |
|--------------------------------|------|-------|--|---|
| name                           |      |       | reference                                |   |
| First Individual timeslot info | MP   |       | Individual<br>timeslot info<br>10.3.6.37 | Individual timeslot info for the first timeslot used by the physical layer. |

| Information Element/Group name      | Need | Multi                                | Type and reference                                | Semantics description  |
|-------------------------------------|------|--------------------------------------|---|--|
| First timeslot channelisation codes | MP   |                                      | Downlink<br>channelisatio<br>n codes<br>10.3.6.17 | These codes shall be used by the physical layer in the timeslot given in First Individual timeslot info.   |
| CHOICE more timeslots               | MP   |                                      |   |  |
| >No more timeslots                  |      |                                      |   | (no data)  |
| >Consecutive timeslots              |      |                                      |   |  |
| >>Number of additional timeslots    | MP   |                                      | Integer(1m<br>axTS-1)                             | The timeslots used by the physical layer shall be timeslots: N mod maxTS (N+1) mod maxTS (N+k) mod maxTS in that order, where N is the timeslot number in the First individual timeslot info and k the Number of additional timeslots. The additional timeslots shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) as the first timeslot. |
| >Timeslot list                      |      |                                      |   |  |
| >>Additional timeslot list          | MP   | 1 to<br><maxts-<br>1&gt;</maxts-<br> |   | The first instance of this parameter corresponds to the timeslot that shall be used second by the physical layer, the second to the timeslot that shall be used third and so on.   |
| >>>CHOICE parameters                | MP   |                                      |   |  |
| >>>Same as last                     |      |                                      |   |  |
| >>>>Timeslot number                 | MP   |                                      | Timeslot<br>Number<br>10.3.6.84                   | The physical layer shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) for this timeslot as for the last one.  |
| >>>New parameters                   |      |                                      |   |  |
| >>>>Individual timeslot info        | MP   |                                      | Individual<br>timeslot info<br>10.3.6.37          |  |
| >>>>Channelisation codes            | MP   |                                      | Downlink<br>channelisatio<br>n codes<br>10.3.6.17 |  |

### 10.3.6.32a Downlink Timeslots and Codes VHCR

NOTE: Only for 7.68 Mcps TDD.

| Information Element/Group name           | Need | Multi | Type and reference                                     | Semantics description  | Version |
|--|------|-------|--|--|---------|
| First Individual timeslot info           | MP   |       | Individual<br>timeslot info<br>10.3.6.37               | Individual timeslot info for the first timeslot used by the physical layer.                              | REL-7   |
| First timeslot channelisation codes VHCR | MP   |       | Downlink<br>channelisation<br>codes VHCR<br>10.3.6.17a | These codes shall be used by the physical layer in the timeslot given in First Individual timeslot info. | REL-7   |
| CHOICE more timeslots                    | MP   |       |  |  | REL-7   |
| >No more timeslots                       |      |       |  | (no data)  | REL-7   |
| >Consecutive timeslots                   |      |       |  |  | REL-7   |

| Information Element/Group name   | Need | Multi                                | Type and reference                                     | Semantics description  | Version |
|----------------------------------|------|--------------------------------------|--|--|---------|
| >>Number of additional timeslots | MP   |                                      | Integer(1max<br>TS-1)                                  | The timeslots used by the physical layer shall be timeslots: N mod maxTS (N+1) mod maxTS (N+k) mod maxTS in that order, where N is the timeslot number in the First individual timeslot info and k the Number of additional timeslots. The additional timeslots shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) as the first timeslot. | REL-7   |
| >Timeslot list                   |      |                                      |  | ,  | REL-7   |
| >>Additional timeslot list       | MP   | 1 to<br><maxts-<br>1&gt;</maxts-<br> |  | The first instance of this parameter corresponds to the timeslot that shall be used second by the physical layer, the second to the timeslot that shall be used third and so on.   | REL-7   |
| >>>CHOICE parameters             | MP   |                                      |  |  | REL-7   |
| >>>>Same as last                 |      |                                      |  |  | REL-7   |
| >>>>Timeslot number              | MP   |                                      | Timeslot<br>Number<br>10.3.6.84                        | The physical layer shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) for this timeslot as for the last one.  | REL-7   |
| >>>New parameters                |      |                                      |  |  | REL-7   |
| >>>>Individual timeslot info     | MP   |                                      | Individual<br>timeslot info<br>10.3.6.37               |  | REL-7   |
| >>>>Channelisation codes VHCR    | MP   |                                      | Downlink<br>channelisation<br>codes VHCR<br>10.3.6.17a |  | REL-7   |

## 10.3.6.33 DPCH compressed mode info

NOTE: Only for FDD.

This information element indicates the parameters of the compressed mode to be used by the UE in order to perform inter-frequency and inter-RAT measurements.

| Information Element/Group name                   | Need      | Multi                                | Type and reference                      | Semantics description   |
|--|-----------|--------------------------------------|---|---|
| Transmission gap pattern sequence                | MP        | 1 to<br><maxtgp<br>S&gt;</maxtgp<br> |   |   |
| >TGPSI   | MP        |                                      | TGPSI<br>10.3.6.82                      |   |
| >TGPS Status Flag                                | MP        |                                      | Enumerated(<br>activate,<br>deactivate) | This flag indicates whether the Transmission Gap Pattern Sequence shall be activated or deactivated.                      |
| >TGCFN   | CV-Active |                                      | Integer<br>(0255)                       | Connection Frame Number of<br>the first frame of the first<br>pattern within the<br>Transmission Gap Pattern<br>Sequence. |
| >Transmission gap pattern sequence configuration | OP        |                                      |   |   |

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description   |
|--------------------------------|------|-------|--|---|
| parameters                     |      |       |  |   |
| >>TGMP                         | MP   |       | Enumerated( TDD measuremen t, FDD measuremen t, GSM carrier RSSI measuremen t, GSM Initial BSIC identification, GSM BSIC re- confirmation, Multi-carrier measuremen t) | Transmission Gap pattern sequence Measurement Purpose.  |
| >>TGPRC                        | MP   |       | Integer<br>(1511,<br>Infinity)   | The number of transmission gap patterns within the Transmission Gap Pattern Sequence.   |
| >>TGSN                         | MP   |       | Integer<br>(014)   | Transmission Gap Starting Slot Number The slot number of the first transmission gap slot within the TGCFN.  |
| >>TGL1                         | MP   |       | Integer(114<br>)   | The length of the first Transmission Gap within the transmission gap pattern expressed in number of slots   |
| >>TGL2                         | MD   |       | Integer<br>(114)   | The length of the second Transmission Gap within the transmission gap pattern. If omitted, then TGL2=TGL1. The value of TGL2 shall be ignored if TGD is set to "undefined"  |
| >>TGD                          | MP   |       | Integer(152<br>69,<br>undefined)   | Transmission gap distance indicates the number of slots between starting slots of two consecutive transmission gaps within a transmission gap pattern. If there is only one transmission gap in the transmission gap pattern, this parameter shall be set to undefined. |
| >>TGPL1                        | MP   |       | Integer<br>(1144)  | The duration of transmission gap pattern 1.   |
| >>RPP                          | MP   |       | Enumerated<br>(mode 0,<br>mode 1).   | Recovery Period Power control mode during the frame after the transmission gap within the compressed frame. Indicates whether normal PC mode or compressed PC mode is applied   |
| >>ITP                          | MP   |       | Enumerated (mode 0, mode 1).   | Initial Transmit Power is the uplink power control method to be used to compute the initial transmit power after the compressed mode gap.   |
| >>CHOICE UL/DL mode            | MP   |       |  |   |
| >>>DL only                     |      |       |  | Compressed mode used in DL only   |

| Information Element/Group name      | Need | Multi | Type and reference                                  | Semantics description  |
|-------------------------------------|------|-------|---|--|
| >>>>Downlink compressed mode method | MP   |       | Enumerated<br>(SF/2, higher<br>layer<br>scheduling) | Method for generating<br>downlink compressed mode<br>gap.<br>If F-DPCH is configured this IE<br>shall not be used by the UE  |
| >>>UL only                          |      |       |   | Compressed mode used in UL only  |
| >>>>Uplink compressed mode method   | MP   |       | Enumerated<br>(SF/2, higher<br>layer<br>scheduling) | Method for generating uplink compressed mode gap   |
| >>>UL and DL                        |      |       | , come daming,                                      | Compressed mode used in UL and DL  |
| >>>>Downlink compressed mode method | MP   |       | Enumerated<br>(SF/2, higher<br>layer<br>scheduling) | Method for generating downlink compressed mode gap. If F-DPCH is configured this IE shall not be used by the UE  |
| >>>>Uplink compressed mode method   | MP   |       | Enumerated<br>(SF/2, higher<br>layer<br>scheduling) | Method for generating uplink compressed mode gap   |
| >>Downlink frame type               | MP   |       | Enumerated (A, B)                                   | If F-DPCH is configured this IE shall not be used by the UE  |
| >>DeltaSIR1                         | MP   |       | Real(03 by<br>step of 0.1)                          | Delta in DL SIR target value to be set in the UE during the frame containing the start of the first transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase).  If F-DPCH is configured this IE shall not be used by the UE                                     |
| >>DeltaSIRafter1                    | MP   |       | Real(03 by<br>step of 0.1)                          | Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the first transmission gap in the transmission gap pattern.  If F-DPCH is configured this IE shall not be used by the UE  |
| >>DeltaSIR2                         | OP   |       | Real(03 by<br>step of 0.1)                          | Delta in DL SIR target value to be set in the UE during the frame containing the start of the second transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase) When omitted, DeltaSIR2 = DeltaSIR1. If F-DPCH is configured this IE shall not be used by the UE |
| >>DeltaSIRafter2                    | OP   |       | Real(03 by<br>step of 0.1)                          | Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the second transmission gap in the transmission gap pattern. When omitted, DeltaSIRafter2 = DeltaSIRafter1. If F-DPCH is configured this IE shall not be used by the UE                                     |

| Information Element/Group name | Need                      | Multi | Type and reference                  | Semantics description  |
|--------------------------------|---------------------------|-------|-------------------------------------|--|
| >>N Identify abort             | CV-Initial<br>BSIC        |       | Integer(112<br>8)                   | Indicates the maximum number of repeats of patterns that the UE shall use to attempt to decode the unknown BSIC of the GSM cell in the initial BSIC identification procedure |
| >>T Reconfirm abort            | CV-Re-<br>confirm<br>BSIC |       | Real(0.510.<br>0 by step of<br>0.5) | Indicates the maximum time allowed for the re-confirmation of the BSIC of one GSM cell in the BSIC re-confirmation procedure. The time is given in steps of 0.5 seconds.     |

| Condition       | Explanation  |
|-----------------|--|
| Active          | This IE is mandatory present when the value of the IE "TGPS Status Flag" is "Activate" and not needed otherwise.                   |
| Initial BSIC    | This IE is mandatory present when the value of the IE "TGMP" is set to "GSM Initial BSIC identification" and not needed otherwise. |
| Re-confirm BSIC | This IE is mandatory present when the value of the IE "TGMP" is set to "GSM BSIC re-confirmation" and not needed otherwise.        |

## 10.3.6.34 DPCH Compressed Mode Status Info

This information element indicates status information of the compressed mode used by the UE in order to perform interfrequency and inter-RAT measurements.

| Information Element/Group name    | Need      | Multi                                | Type and reference                      | Semantics description   |
|-----------------------------------|-----------|--------------------------------------|---|---|
| TGPS reconfiguration CFN          | MP        |                                      | Integer<br>(0255)                       |   |
| Transmission gap pattern sequence | MP        | 1 to<br><maxtgp<br>S&gt;</maxtgp<br> |   |   |
| >TGPSI                            | MP        |                                      | TGPSI<br>10.3.6.82                      | Transmission Gap Pattern<br>Sequence Identifier   |
| >TGPS Status Flag                 | MP        |                                      | Enumerated(<br>activate,<br>deactivate) | This flag indicates whether the Transmission Gap Pattern Sequence it shall be activated or deactivated.                   |
| >TGCFN                            | CV-Active |                                      | Integer<br>(0255)                       | Connection Frame Number of<br>the first frame of the first<br>pattern within the<br>Transmission Gap Pattern<br>Sequence. |

| Condition | Explanation  |  |  |
|-----------|--|--|--|
| Active    | This IE is mandatory present when the value of the IE<br>"TGPS Status Flag" is "Activate" and not needed |  |  |
|           | otherwise.   |  |  |

#### 10.3.6.34a DTX-DRX information

NOTE: For FDD only.

| Information Element/Group name                | Need | Multi | Type and reference  | Semantics description   | Version |
|---|------|-------|---|---|---------|
| DTX Information                               | OP   |       |   |   | REL-7   |
| >CHOICE E-DCH TTI length                      | MP   |       |   |   | REL-7   |
| >>10 ms                                       | 1011 |       |   |   | REL-7   |
| >>>UE DTX cycle 1                             | MP   |       | Enumerated (1, 5, 10, 20)   | Units of subframes.   | REL-7   |
| >>>UE DTX cycle 2                             | MP   |       | Enumerated (5, 10, 20, 40, 80, 160)   | Units of subframes. Two spare values are needed.  | REL-7   |
| >>>MAC DTX cycle                              | MP   |       | Enumerated (5, 10, 20)  | Units of subframes. One spare value is needed.  | REL-7   |
| >>2 ms  |      |       |   | necueu.   | REL-7   |
| >>>UE DTX cycle 1                             | MP   |       | Enumerated (1, 4, 5, 8, 10, 16, 20)   | Units of subframes. One spare value is needed.  | REL-7   |
| >>>UE DTX cycle 2                             | MP   |       | Enumerated<br>(4, 5, 8, 10,<br>16, 20, 32,<br>40, 64, 80,<br>128, 160)      | Units of subframes. Four spare values are needed.   | REL-7   |
| >>>MAC DTX cycle                              | MP   |       | Enumerated (1, 4, 5, 8, 10, 16, 20)   | Units of subframes. One spare value is needed.  | REL-7   |
| >Inactivity Threshold for UE<br>DTX cycle 2   | MP   |       | Enumerated (1, 4, 8, 16, 32, 64, 128, 256)                                  | Units of E-DCH TTIs.<br>Eight spare values are<br>needed.   | REL-7   |
| >Default SG in DTX Cycle 2                    | OP   |       | Integer<br>(037,38)   | Serving Grant value to be used at the transition in DTX-Cycle-2. (037) indicates E-DCH serving grant index as defined in [15]; index 38 means zero grant. | REL-7   |
| >UE DTX long preamble length                  | MD   |       | Enumerated (4, 15)  | Units of slots Default value is 2 slots   | REL-7   |
| >MAC Inactivity Threshold                     | MP   |       | Enumerated<br>(1, 2, 4, 8,<br>16, 32, 64,<br>128, 256,<br>512, Infinity)    | Units of E-DCH TTIs.<br>Five spare values are<br>needed.  | REL-7   |
| >CQI DTX Timer                                | MP   |       | Enumerated<br>(0, 1, 2, 4, 8,<br>16, 32, 64,<br>128, 256,<br>512, Infinity) | Units of subframes. Four spare values are needed.   | REL-7   |
| >UE DPCCH burst_1                             | MP   |       | Enumerated (1, 2, 5)  | Units of sub-frames One spare value is needed.  | REL-7   |
| >UE DPCCH burst_2                             | MP   |       | Enumerated (1, 2, 5)  | Units of sub-frames One spare value is needed.  | REL-7   |
| DRX Information                               | OP   |       |   |   | REL-7   |
| >UE DRX cycle                                 | MP   |       | Enumerated (4, 5, 8, 10, 16, 20)  | Units of subframes. Two spare values are needed.  | REL-7   |
| >Inactivity Threshold for UE<br>DRX cycle     | MP   |       | Enumerated<br>(0, 1, 2, 4, 8,<br>16, 32, 64,<br>128, 256,<br>512)           | Units of subframes Five spare values are needed.  | REL-7   |
| >Inactivity Threshold for UE Grant Monitoring | MP   |       | Enumerated<br>(0, 1, 2, 4, 8,<br>16, 32, 64,<br>128, 256)                   | Units of E-DCH TTIs<br>Six spare values are<br>needed.  | REL-7   |
| >UE DRX Grant Monitoring                      | MP   |       | Boolean   |   | REL-7   |
| Uplink DPCCH slot format information          | MP   | ETSI  | Enumerated (1, 4)   | Slot format # to be used<br>on UL DPCCH [26]<br>One spare value is<br>needed.   | REL-7   |

#### 10.3.6.34b DTX-DRX timing information

NOTE: For FDD only.

| Information Element/Group name | Need | Multi | Type and reference                          | Semantics description  | Version |
|--------------------------------|------|-------|---|--|---------|
| CHOICE timing                  | MP   |       |   |  | REL-7   |
| >Continue                      |      |       | (no data)                                   | Used in reconfigurations without interruption of DTX-DRX and HS-SCCH less. | REL-7   |
| >New timing                    |      |       |   |  | REL-7   |
| >>Enabling Delay               | MP   |       | Enumerated (0, 1, 2, 4, 8, 16, 32, 64, 128) | In radio frames.<br>Seven spare values are<br>needed                       | REL-7   |
| >>UE DTX DRX Offset            | MP   |       | Integer (0<br>159)                          | Units of subframes. Offset of the DTX and DRX cycles at the given TTI.     | REL-7   |

Note: Only the values of the IE "UE DTX DRX Offset" that fulfill the equation *UE DTX DRX Offset* mod 5=0 can be configured with 10ms E-DCH TTI. The UE behaviour is not specified if any other values are used with 10ms TTI.

## 10.3.6.35 Dynamic persistence level

| Information Element/Group | Need | Multi | Type and    | Semantics description  |
|---------------------------|------|-------|-------------|--|
| name                      |      |       | reference   |  |
| Dynamic persistence level | MP   |       | Integer(18) | Level shall be mapped to a dynamic persistence value in the range 0 1. The mapping is described in subclause 8.5.12. |

### 10.3.6.35a FPACH info

NOTE: Only for 1.28 Mcps TDD.

| Information Element/Group name | Need | Multi | Type and reference                               | Semantics description   | Version |
|--------------------------------|------|-------|--|---|---------|
| Timeslot number                | MP   |       | Integer(06)                                      | -   | REL-4   |
| Channelisation code            | MP   |       | Enumerated(<br>(16/1)(16/1<br>6)                 |   | REL-4   |
| Midamble Shift and burst type  | MP   |       | Midamble<br>shift and<br>burst type<br>10.3.6.41 |   | REL-4   |
| WT                             | MP   |       | Integer(14)                                      | The number of sub-frames, following the sub-frame in which the SYNC UL is transmitted, in which the FPACH can be transmitted. | REL-4   |

## 10.3.6.35b Frequency band indicator

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description | Version |
|--------------------------------|------|-------|--|-----------------------|---------|
| Frequency band indicator       | MP   |       | Enumerated( Band I, Band II, Band III, Band IV, Band V, Band VI, Band VII, extension | uescription           | REL-6   |
|                                |      |       | indicator)   |                       |         |

## 10.3.6.35c Frequency band indicator 2

| Information Element/Group  | Need | Multi | Type and    | Semantics          | Version |
|----------------------------|------|-------|-------------|--------------------|---------|
| name                       |      |       | reference   | description        |         |
| Frequency band indicator 2 | MP   |       | Enumerated( | Band XI – Band     | REL-6   |
|                            |      |       | Band VIII,  | XXII are yet to be |         |
|                            |      |       | Band IX,    | defined in this    |         |
|                            |      |       | Band X,     | version of the     |         |
|                            |      |       | Band XI,    | specification      |         |
|                            |      |       | Band XII,   | -                  |         |
|                            |      |       | Band XIII,  |                    |         |
|                            |      |       | Band XIV,   |                    |         |
|                            |      |       | Band XV,    |                    |         |
|                            |      |       | Band XVI,   |                    |         |
|                            |      |       | Band XVII,  |                    |         |
|                            |      |       | Band XVIII, |                    |         |
|                            |      |       | Band XIX,   |                    |         |
|                            |      |       | Band XX,    |                    |         |
|                            |      |       | Band XXI,   |                    |         |
|                            |      |       | Band XXII,  |                    |         |
|                            |      |       | extension   |                    |         |
|                            |      |       | indicator)  |                    |         |

## 10.3.6.36 Frequency info

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description  |
|--------------------------------|------|-------|---------------------|--|
| CHOICE mode                    | MP   |       |                     |  |
| >FDD                           |      |       |                     |  |
| >>UARFCN uplink (Nu)           | OP   |       | Integer(016<br>383) | If this IE is not present, the default duplex distance defined for the operating frequency band shall be used [21] |
| >>UARFCN downlink (Nd)         | MP   |       | Integer(0<br>16383) | [21]   |
| >TDD                           |      |       |                     |  |
| >>UARFCN (Nt)                  | MP   |       | Integer(0<br>16383) | [22]   |

## 10.3.6.3600 HS-PDSCH Midamble Configuration

NOTE: Only for TDD 1.28 Mcps.

| Information Element/Group name | Need  | Multi | Type and reference   | Semantics description   | Version |
|--------------------------------|-------|-------|--|---|---------|
| Midamble Allocation Mode       | MP    |       | Enumerated( Default midamble, Common midamble, UE specific midamble) | This midamble allocation mode applies to all HS-PDSCH resources assigned to the UE. | REL-5   |
| Midamble Configuration         | MP    |       | Integer(2, 4, 6, 8, 10, 12, 14, 16)                                  | This configuration applies to all HS-PDSCH resources assigned to the UE.            | REL-5   |
| Midamble Shift                 | CV-UE |       | Integer(015  | This shift, when present, applies to all HS-PDSCH resources assigned to the UE.     | REL-5   |

| Condition | Explanation   |
|-----------|---|
| UE        | This IE is mandatory present when the value of the IE |
|           | "Midamble Allocation Mode" is "UE specific midamble"  |
|           | and not needed otherwise.                             |

# 10.3.6.360 HS-PDSCH Timeslot Configuration

NOTE: Only for TDD 3.84 Mcps.

| Information Element/Group                    | Need  | Multi  | Type and   | Semantics          | Version |
|--|-------|--|--|--------------------|---------|
| name   |       |  | reference  | description        |         |
| HS-PDSCH Timeslot                            | MP    | 1 to   |  |                    | REL-5   |
| Configuration List                           |       | <maxts-< td=""><td></td><td></td><td></td></maxts-<> |  |                    |         |
|  |       | 1>   |  |                    |         |
| >Timeslot Number                             | MP    |  | Integer<br>(014)   |                    | REL-5   |
| >CHOICE Burst Type                           | MP    |  |  |                    | REL-5   |
| >>Type 1                                     |       |  |  |                    | REL-5   |
| >>>Midamble Allocation Mode                  | MP    |  | Enumerated<br>(Default<br>midamble,<br>Common<br>midamble,<br>UE specific<br>midamble) |                    | REL-5   |
| >>>Midamble configuration burst type 1 and 3 | MP    |  | Integer (4, 8, 16)   | As defined in [30] | REL-5   |
| >>>Midamble Shift                            | CV-UE |  | Integer<br>(015)   |                    | REL-5   |
| >>Type 2                                     |       |  |  |                    | REL-5   |
| >>>Midamble Allocation Mode                  | MP    |  | Enumerated<br>(Default<br>midamble,<br>Common<br>midamble,<br>UE specific<br>midamble) |                    | REL-5   |
| >>>Midamble configuration burst type 2       | MP    |  | Integer (3, 6)   | As defined in [30] | REL-5   |
| >>>Midamble Shift                            | CV-UE |  | Integer (05)   |                    | REL-5   |

| Condition | Explanation  |
|-----------|--|
| UE        | This IE is mandatory present when the value of the IE "Midamble Allocation Mode" is "UE specific midamble" |
|           | and not needed otherwise.  |

## 10.3.6.36oa HS-PDSCH Timeslot Configuration VHCR

NOTE: Only for TDD 7.68 Mcps.

| Information Element/Group name               | Need  | Multi                                | Type and reference   | Semantics description | Version |
|--|-------|--------------------------------------|--|-----------------------|---------|
| HS-PDSCH Timeslot<br>Configuration List      | MP    | 1 to<br><maxts-<br>1&gt;</maxts-<br> |  |                       | REL-7   |
| >Timeslot Number                             | MP    |                                      | Integer<br>(014)   |                       | REL-7   |
| >CHOICE Burst Type                           | MP    |                                      |  |                       | REL-7   |
| >>Type 1                                     |       |                                      |  |                       | REL-7   |
| >>>Midamble Allocation Mode                  | MP    |                                      | Enumerated<br>(Default<br>midamble,<br>Common<br>midamble,<br>UE specific<br>midamble) |                       | REL-7   |
| >>>Midamble configuration burst type 1 and 3 | MP    |                                      | Integer (4, 8, 16)   | As defined in [30]    | REL-7   |
| >>>Midamble Shift                            | CV-UE |                                      | Integer<br>(015)   |                       | REL-7   |
| >>Type 2                                     |       |                                      |  |                       | REL-7   |
| >>>Midamble Allocation Mode                  | MP    |                                      | Enumerated<br>(Default<br>midamble,<br>Common<br>midamble,<br>UE specific<br>midamble) |                       | REL-7   |
| >>>Midamble configuration burst type 2       | MP    |                                      | Integer (4, 8)   | As defined in [30]    | REL-7   |
| >>>Midamble Shift                            | CV-UE |                                      | Integer (07)   |                       | REL-7   |

| I | Condition | Explanation   |
|---|-----------|---|
| Ī | UE        | This IE is mandatory present when the value of the IE |
|   |           | "Midamble Allocation Mode" is "UE specific midamble"  |
|   |           | and not needed otherwise.                             |

## 10.3.6.36a HS-SCCH Info

| Information Element/Group name               | Need | Multi                                    | Type and reference   | Semantics description   | Version |
|--|------|--|--|---|---------|
| CHOICE mode                                  | MP   |  |  | -   | REL-5   |
| >FDD   |      |  |  |   | REL-5   |
| >>DL Scrambling Code                         | MD   |  | Secondary<br>scrambling<br>code<br>10.3.6.74   | DL Scrambling code to be applied for HS-DSCH and HS-SCCH. Default is same scrambling code as for the primary CPICH.   | REL-5   |
| >>HS-SCCH Channelisation<br>Code Information | MP   | 1 to<br><maxhss<br>CCHs &gt;</maxhss<br> |  | Note 2  | REL-5   |
| >>>HS-SCCH Channelisation                    | MP   |  | Integer  |   | REL-5   |
| Code   |      |  | (0127)   |   |         |
| >TDD   |      |  |  |   | REL-5   |
| >>CHOICE TDD option                          | MP   |  |  |   | REL-5   |
| >>>3.84 Mcps                                 | †    |  |  |   | REL-5   |
| >>> Ack-Nack Power Offset                    | MP   |  | Integer (-78<br>by step of 1)  | dB  | REL-5   |
| >>>> HS-SICH Power Control Info              | MP   |  | HS-SICH<br>Power<br>Control Info<br>10.3.6.36b   | Note 1  | REL-5   |
| DI ED towart                                 | MD   | -  |  | Cianalla divalva ia   | DELC    |
| >>>> BLER target                             | MP   |  | Real<br>(-3.150 by<br>step of 0.05)  | Signalled value is<br>Log10(HS-SCCH<br>BLER quality<br>target).This IE is<br>Not Present in<br>REL-5.   | REL-6   |
| >>>> Dhs-sync                                | OP   |  | Integer (-<br>20+10)   | Value in dB set to indicate the dB difference between the maximum allowed HS-SCCH physical channel transmit power [33] and the beacon reference power (it is one means of controlling the area of HS-DSCH operation within the cell). | REL-6   |
| >>>>HS-SCCH Set Configuration                | MP   | 1 to<br><maxhss<br>CCHs&gt;</maxhss<br>  |  |   | REL-5   |
| >>>>Timeslot number                          | MP   |  | Integer<br>(014)   |   | REL-5   |
| >>>>Channelisation code                      | MP   |  | Enumerated ((16/1)(16/16))   |   | REL-5   |
| >>>>Midamble Allocation mode                 | MP   |  | Enumerated<br>(Default<br>midamble,<br>Common<br>midamble,<br>UE specific<br>midamble) | HS-SCCH always uses burst type 1.   | REL-5   |
| >>>>Midamble configuration                   | MP   |  | Integer  |   | REL-5   |

|                               |       | (4, 8, 16)  |   |       |
|-------------------------------|-------|---|---|-------|
| >>>>Midamble Shift            | CV-UE | Integer(015   |   | REL-5 |
| >>>>BLER target               | MP    | Real<br>(-3.150 by<br>step of 0.05)                             | Signalled value is<br>Log10(HS-SCCH<br>BLER quality<br>target).<br>This IE is not<br>present in REL-6<br>and beyond.  | REL-5 |
| >>>>HS-SICH configuration     |       |   | and boyond.   | REL-5 |
| >>>>>Timeslot number          | MP    | Integer<br>(014)  |   | REL-5 |
| >>>>>Channelisation code      | MP    | Enumerated ((16/1)(16/16))                                      |   | REL-5 |
| >>>>Midamble Allocation mode  | MP    | Enumerated<br>(Default<br>midamble,<br>UE specific<br>midamble) | HS-SICH always uses burst type 1.   | REL-5 |
| >>>>Midamble configuration    | MP    | Integer<br>(4, 8, 16)   |   | REL-5 |
| >>>>Midamble Shift            | CV-UE | Integer<br>(015)  |   | REL-5 |
| >>>7.68 Mcps                  | ME    | Int. / 7 6  | -10   | REL-7 |
| >>>Ack-Nack Power Offset      | MP    | Integer (-78<br>by step of 1)                                   | dB  | REL-7 |
| >>>HS-SICH Power Control Info | MP    | HS-SICH<br>Power<br>Control Info<br>10.3.6.36b                  |   | REL-7 |
| >>>BLER target                | MP    | Real<br>(-3.150 by<br>step of 0.05)                             | Signalled value is<br>Log10(HS-SCCH<br>BLER quality<br>target).   | REL-7 |
| >>>>Dhs-sync                  | OP    | Integer (-<br>20+10)  | Value in dB set to indicate the dB difference between the maximum allowed HS-SCCH physical channel transmit power [33] and the beacon reference power (it is one means of controlling the area of HS-DSCH operation within the cell). | REL-7 |
| >>>D <sub>hs-sync</sub>       | OP    | Integer (-<br>20+10)  | Value in dB set to indicate the dB difference between the maximum allowed HS-SCCH physical channel transmit power [33] and the beacon reference power (it is one means of controlling the area of HS-DSCH operation within the cell). | REL-7 |

| >>>HS-SCCH Set                  | MP    | 1 to                             |  |  | REL-7  |
|---------------------------------|-------|----------------------------------|--|--|--------|
| Configuration                   | IVII  | <maxhs-<br>SCCHs&gt;</maxhs-<br> |  |  | INCE 7 |
| >>>>Timeslot number             | MP    |                                  | Integer<br>(014)   |  | REL-7  |
| >>>>Channelisation code         | MP    |                                  | Enumerated ((32/1)(32/32))   |  | REL-7  |
| >>>>Midamble Allocation mode    | MP    |                                  | Enumerated<br>(Default<br>midamble,<br>Common<br>midamble,<br>UE specific<br>midamble) | HS-SCCH always<br>uses burst type 1.   | REL-7  |
| >>>>Midamble configuration      | MP    |                                  | Integer<br>(4, 8, 16)  |  | REL-7  |
| >>>>Midamble Shift              | CV-UE |                                  | Integer(015  |  | REL-7  |
| >>>>HS-SICH configuration       |       |                                  |  |  | REL-5  |
| >>>>Timeslot number             | MP    |                                  | Integer<br>(014)   |  | REL-5  |
| >>>>Channelisation code         | MP    |                                  | Enumerated ((32/1)(32/32))   |  | REL-5  |
| >>>>>Midamble Allocation mode   | MP    |                                  | Enumerated<br>(Default<br>midamble,<br>UE specific<br>midamble)                        | HS-SICH always uses burst type 1.  | REL-5  |
| >>>>Midamble configuration      | MP    |                                  | Integer<br>(4, 8, 16)  |  | REL-5  |
| >>>>Midamble Shift              | CV-UE |                                  | Integer<br>(015)   |  | REL-5  |
| >>>1.28 Mcps                    |       |                                  |  |  | REL-5  |
| >>>Ack-Nack Power Offset        | MP    |                                  | Integer<br>(-78 by step<br>of 1)   | dB. This IE is Not Present in REL-5. Note  | REL-6  |
| >>>PRX <sub>HS-SICH</sub>       | MP    |                                  | Integer<br>(-12058 by<br>step of 1)  | dBm. Desired<br>power level for<br>HS-SICH.<br>This IE is Not<br>Present in REL-5  | REL-6  |
| >>>TPC step size                | MP    |                                  | Integer<br>(1, 2, 3)   | dB.<br>This IE is Not<br>Present in REL-5.   | REL-6  |
| >>>BLER target                  | MP    |                                  | Real<br>(-3.150 by<br>step of 0.05)  | Signalled value is<br>Log10(HS-SCCH<br>BLER quality<br>target).<br>This IE is Not<br>Present in REL-5.                                     | REL-6  |
| >>>Power Control GAP            | MD    |                                  | Integer<br>(1255)  | Unit: Number of subframes Default value is 1.  | REL-7  |
| >>>Pathloss compensation switch | MD    |                                  | Boolean  | TRUE: UE shall perform the pathloss compensation for HS-SICH power control when HS-SICH transmission gap is less than "Power Control GAP". | REL-7  |

|                                |       | 1                                       |  | T  | 1     |
|--------------------------------|-------|---|--|--|-------|
|                                |       |   |  | FALSE: UE shall<br>not consider the<br>pathloss<br>compensation for<br>HS-SICH power<br>control.<br>Default value is<br>FALSE. |       |
| >>>HS-SCCH Set Configuration   | MP    | 1 to<br><maxhss<br>CCHs&gt;</maxhss<br> |  | -  | REL-5 |
| >>>>Timeslot number            | MP    |   | Integer<br>(06)  |  | REL-5 |
| >>>>First Channelisation code  | MP    |   | Enumerated ((16/1)(16/16))   |  | REL-5 |
| >>>>Second Channelisation code | MP    |   | Enumerated ((16/1)(16/16))   |  | REL-5 |
| >>>>Midamble Allocation mode   | MP    |   | Enumerated<br>(Default<br>midamble,<br>Common<br>midamble,<br>UE specific<br>midamble) |  | REL-5 |
| >>>> Midamble Shift            | CV-UE |   | Integer<br>(015)   |  | REL-5 |
| >>>>Midamble configuration     | MP    |   | Integer<br>(2, 4, 6, 8,<br>10, 12, 14,<br>16)  |  | REL-5 |
| >>>>BLER target                | MP    |   | Real<br>(-3.150 by<br>step of 0.05)  | Signalled value is<br>Log10(HS-SCCH<br>BLER quality<br>target).<br>This IE is not<br>present in REL-6<br>and beyond.           | REL-5 |
| >>>>HS-SICH configuration      |       |   |  |  | REL-5 |
| >>>>Timeslot number            | MP    |   | Integer<br>(06)  |  | REL-5 |
| >>>>>Channelisation code       | MP    |   | Enumerated ((16/1)(16/16))   |  | REL-5 |
| >>>>>Midamble Allocation mode  | MP    |   | Enumerated<br>(Default<br>midamble,<br>UE specific<br>midamble)                        |  | REL-5 |
| >>>>>Midamble configuration    | MP    |   | Integer<br>(2, 4, 6, 8,<br>10, 12, 14,<br>16)  |  | REL-5 |
| >>>>Midamble Shift             | CV-UE |   | Integer<br>(015)   |  | REL-5 |
| >>>>Ack-Nack Power Offset      | MP    |   | Integer<br>(-78 by step<br>of 1)   | dB. This IE is not present in REL-6 and beyond. Note   | REL-5 |
| >>>>PRX <sub>HS</sub> -sich    | MP    |   | Integer<br>(-12058 by<br>step of 1)  | dBm. Desired power level for HS-SICH. This IE is not present in REL-6 and beyond.  | REL-5 |

| >>>>>TPC step size             | MP  |  | Integer   | dB.              | REL-5 |  |
|--------------------------------|---|--|-----------|------------------|-------|--|
|                                |   |  | (1, 2, 3) | This IE is not   |       |  |
|                                |   |  |           | present in REL-6 |       |  |
|                                |   |  |           | and beyond.      |       |  |
| Note 1: Ack-Nack Power Offset  | Note 1: Ack-Nack Power Offset is the difference in the desired RX power between HS-SICH transmissions |  |           |                  |       |  |
| conveying an acknowle          | conveying an acknowledgement and transmissions conveying a negative acknowledgement                   |  |           |                  |       |  |
| signalled to the UE in IE      | signalled to the UE in IE "HS-SCCH Info".   |  |           |                  |       |  |
| Note 2: The list of HS-SCCH(s) |   |  |           |                  |       |  |

| Condition | Explanation   |  |  |
|-----------|---|--|--|
| UE        | This IE is mandatory present when the value of the IE |  |  |
|           | "Midamble Allocation Mode" is "UE specific midamble   |  |  |
|           | and not needed otherwise.                             |  |  |

#### 10.3.6.36ab HS-SCCH less information

NOTE: For FDD only

| Information Element/Group          | Need | Multi                               | Type and         | Semantics description   | Version |
|------------------------------------|------|-------------------------------------|------------------|---|---------|
| name                               |      |                                     | reference        |   |         |
| CHOICE HS-SCCH less                | MP   |                                     |                  |   | REL-7   |
| operation                          |      |                                     |                  |   |         |
| >Continue HS-SCCH less             |      |                                     | (no data)        |   | REL-7   |
| operation                          |      |                                     |                  |   |         |
| >New HS-SCCH less operation        |      |                                     |                  |   | REL-7   |
| >>HS-PDSCH Code Index              | MP   |                                     | Integer<br>(115) | Index of first HS-PDSCH code  | REL-7   |
| >>Transport Block Size List        |      | 1<<br>maxHS-<br>SCCHLe<br>ssTrBlk > |                  |   | REL-7   |
| >>>Transport Block Size Index      | MP   |                                     | Integer<br>(190) | Index of the MAC-hs or<br>MAC-ehs transport block<br>size as described in<br>appendix A of [15]   | REL-7   |
| >>>HS-PDSCH Second Code<br>Support | MP   |                                     | Boolean          | Indicates whether the second HS-PDSCH code is used for this TB size. If TRUE, the HS-PDSCH second code index value is the value of IE "HS-PDSCH Code Index" incremented by 1. | REL-7   |

#### 10.3.6.36b HS-SICH Power Control Info

This IE is used to transfer HS-SICH power control info to the UE and only applies to TDD 3.84 Mcps and 7.68 Mcps.

| Information Element/Group name | Need | Multi | Type and reference                | Semantics description | Version |
|--------------------------------|------|-------|-----------------------------------|-----------------------|---------|
| UL target SIR                  | MP   |       | Real<br>(-1120 by<br>step of 0.5) | dB                    | REL-5   |
| HS-SICH Constant value         | MP   |       | Constant<br>value<br>10.3.6.11    | NOTE 1                | REL-5   |

NOTE 1: Alignment to ASN.1: the IE "Constant value TDD" (10.3.6.11a) should have been used to provide the correct value range. The IE "Constant value" (10.3.6.11) is used to keep compatibility with REL-5.

#### 10.3.6.36c HS-DSCH common system information

NOTE: For FDD only.

| Information Element/Group name       | Need | Multi  | Type and reference   | Semantics description | Version |
|--------------------------------------|------|--|--|-----------------------|---------|
| CCCH mapping info                    | MP   |  | Common RB<br>mapping info<br>10.3.4.oa                     |                       | REL-7   |
| SRB1 mapping info                    | MD   |  | Common RB<br>mapping info<br>10.3.4.oa                     | Note                  | REL-7   |
| Common MAC-ehs reordering queue list | MP   |  | Common<br>MAC-ehs<br>reordering<br>queue list<br>10.3.5.3a |                       | REL-7   |
| HS-SCCH system info                  | MP   |  | HS-SCCH<br>system info<br>10.3.6.36e                       |                       | REL-7   |
| HARQ system Info                     | MP   |  | HARQ Info<br>10.3.5.7a                                     |                       | REL-7   |
| Common H-RNTI Information            | MP   | 1 to<br><maxcom<br>monHRNTI<br/>&gt;</maxcom<br> |  |                       | REL-7   |
| >Common H-RNTI                       | MP   |  | H-RNTI<br>10.3.3.14a                                       |                       | REL-7   |
| BCCH specific H-RNTI                 | MP   |  | H-RNTI<br>10.3.3.14a                                       |                       | REL-7   |

NOTE: The default values for the "SRB1 mapping info" are 1 for the Logical channel identity and 0 for the MAC-ehs queue identity.

## 10.3.6.36d HS-DSCH paging system information

These parameters enable the UE in CELL\_PCH and URA\_PCH to receive transmissions on HSDPA cell resources.

NOTE: Only for FDD.

| Information Element/Group name       | Need | Multi                                  | Type and reference                           | Semantics description   | Version |
|--------------------------------------|------|--|--|---|---------|
| DL Scrambling Code                   | MD   |  | Secondary<br>scrambling<br>code<br>10.3.6.74 | DL Scrambling code to be applied for HS-DSCH and HS-SCCH. Default is same scrambling code as for the primary CPICH. | REL-7   |
| PICH for HSDPA supported paging list | MP   | 1 to<br><maxscc<br>PCH&gt;</maxscc<br> |  |   | REL-7   |

| >HSDPA associated PICH info      | MP |        | PICH info<br>10.3.6.49 |   | REL-7 |
|----------------------------------|----|--------|------------------------|---|-------|
| >HS-PDSCH Channelisation<br>Code | MP |        | Integer<br>(015)       | HS-PDSCH channel, associated with the PICH for HS- SCCH less PAGING TYPE 1 message transmission.                      | REL-7 |
| Number of PCCH transmissions     | MP |        | Integer (15)           | number of<br>subframes used to<br>transmit the<br>PAGING TYPE 1.  | REL-7 |
| Transport Block Size List        | MP | 1 to 2 |                        |   | REL-7 |
| >Transport Block Size Index      | MP |        | Integer<br>(132)       | Index of value<br>range 1 to 32 of<br>the MAC-ehs<br>transport block<br>size as described<br>in appendix A of<br>[15] | REL-7 |

#### 10.3.6.36e HS-SCCH system info

These parameters enable the UE to receive transmission on HSDPA cell resources, when the UE is not in CELL\_DCH.

NOTE: for FDD only.

| Information Element/Group               | Need | Multi                                   | Type and                                     | Semantics   | Version |
|---|------|---|--|---|---------|
| name                                    |      |   | reference                                    | description   |         |
| DL Scrambling Code                      | MD   |   | Secondary<br>scrambling<br>code<br>10.3.6.74 | DL Scrambling code to be applied for HS-DSCH and HS-SCCH. Default is same scrambling code as for the primary CPICH. | REL-7   |
| HS-SCCH Channelisation Code Information | MP   | 1 to<br><maxhss<br>CCHs&gt;</maxhss<br> |  |   | REL-7   |
| >HS-SCCH Channelisation<br>Code         | MP   |   | Integer<br>(0127)<br>(NOTE)                  |   | REL-7   |

NOTE: UTRAN should use the first indexed HS-SCCH Channelisation code for the BCCH specific H-RNTI to indicate system information change information. Otherwise UE behaviour is unspecified.

#### 10.3.6.37 Individual timeslot info

| Information Element/Group name | Need | Multi | Type and reference                  | Semantics description  | Version |
|--------------------------------|------|-------|-------------------------------------|--|---------|
| Timeslot number                | MP   |       | Timeslot<br>number<br>10.3.6.84     | Timeslot within a frame  |         |
| TFCI existence                 | MP   |       | Boolean                             | TRUE indicates that the TFCI exists. It shall be coded in the physical channel defined in [30] of this timeslot. |         |
| Midamble Shift and burst type  | MP   |       | Midamble<br>shift and<br>burst type | For 1.28 Mcps<br>TDD, if the cell is<br>operating in   |         |

| Information Element/Group name | Need | Multi | Type and reference            | Semantics description  | Version |
|--------------------------------|------|-------|-------------------------------|--|---------|
| name                           |      |       | 10.3.6.41                     | MBSFN mode, the UE shall ignore the contents of this IE.   |         |
| CHOICE TDD option              | MP   |       |                               |  | REL-4   |
| >3.84 Mcps TDD                 |      |       |                               | (no data)  | REL-4   |
| >7.68 Mcps TDD                 |      |       |                               | (no data)  | REL-7   |
| >1.28 Mcps TDD                 |      |       |                               |  | REL-4   |
| >>Modulation                   | MP   |       | Enumerated(<br>QPSK,<br>8PSK) |  | REL-4   |
| >>SS-TPC Symbols               | MP   |       | Enumerated(<br>0, 1, 16/SF)   | Denotes amount of SS and TPC bits send in this timeslot  | REL-4   |
| >>Additional TPC-SS Symbols    | OP   |       | Integer(115                   | Specifies the number of additional codes in this timeslot that carry TPC and SS symbols as specified in [33] | REL-4   |

#### 10.3.6.38 Individual Timeslot interference

Parameters used by the UE for uplink open loop power control in TDD.

| Information element      | Need | Multi | Type and reference                      | Semantics description |
|--------------------------|------|-------|---|-----------------------|
| Timeslot number          | MP   |       | Timeslot<br>number<br>10.3.6.84         |                       |
| UL Timeslot Interference | MP   |       | UL<br>Interference<br>TDD<br>10.3.6.87a |                       |

## 10.3.6.39 Maximum allowed UL TX power

This information element indicates the maximum allowed uplink transmit power.

| Information Element         | Need | Multi | Type and reference | Semantics description |
|-----------------------------|------|-------|--------------------|-----------------------|
| Maximum allowed UL TX power | MP   |       | Integer(-<br>5033) | In dBm                |

#### 10.3.6.39a Multi-frequency Info (1.28 Mcps TDD only)

| IE/Group Name         | Presence | Multi | IE Type and Reference | Semantics<br>Description   | Version |
|-----------------------|----------|-------|-----------------------|--|---------|
| Second Frequency Info | OP       |       | Integer (0<br>16383)  | 1.28 Mcps TDD only   | REL-7   |
| FPACH Frequency Info  | OP       |       | Integer (0<br>16383)  | 1.28 Mcps TDD only   | REL-7   |
| UpPCH Position Info   | OP       |       | Integer (0<br>127)    | Only for 1.28 Mcps TDD, if UpPCH occupies UpPTS, the parameter is not needed. Or the parameter is caculated for the uplink access position of a cell | REL-7   |

10.3.6.40 Void

#### 10.3.6.40a Measurement Feedback Info

| Information Element/Group  | Need | Multi | Type and   | Semantics   | Version |
|----------------------------|------|-------|--|---|---------|
| name                       |      |       | reference  | description   |         |
| CHOICE mode                | MP   |       |  |   | REL-5   |
| >FDD                       |      |       |  |   | REL-5   |
| >>Measurement Power Offset | MP   |       | Real (-6 13 by step of 0.5)                        | The measurement power offset, $\Gamma$ , in dB, as described in [29]. | REL-5   |
| >>CQI Feedback cycle, k    | MP   |       | Integer<br>(0, 2, 4, 8,<br>10, 20, 40,<br>80, 160, | In milliseconds.  | REL-5   |
|                            |      |       | 16, 32, 64)  | In milliseconds.  | REL-7   |
| >>CQI repetition factor    | MP   |       | Integer<br>(14)                                    |   | REL-5   |
| >>∆ <sub>CQI</sub>         | MP   |       | Integer (08)                                       | Refer to quantization of the power offset in [28]                     | REL-5   |
| >TDD                       |      |       |  | (no data)   | REL-5   |

#### 10.3.6.41 Midamble shift and burst type

NOTE: Only for TDD.

This information element indicates burst type and midamble allocation. Three different midamble allocation schemes exist:

- Default midamble: the midamble shift is selected by layer 1 depending on the associated channelisation code (DL and UL)
- Common midamble: the midamble shift is chosen by layer 1 depending on the number of channelisation codes (possible in DL only)
- UE specific midamble: a UE specific midamble is explicitly assigned (DL and UL).

| Information Element/Group name                | Need  | Multi    | Type and reference   | Semantics description                            | Version |
|---|-------|----------|--|--|---------|
| CHOICE TDD option                             | MP    |          |  |  | REL-4   |
| >3.84 Mcps TDD                                |       |          |  |  | REL-4   |
| >>CHOICE Burst Type                           | MP    |          |  |  |         |
| >>>Type 1                                     |       |          |  |  |         |
| >>>>Midamble Allocation Mode                  | MP    |          | Enumerated (Default midamble, Common midamble, UE specific midamble)                   |  |         |
| >>>>Midamble configuration burst type 1 and 3 | MP    |          | Integer(4, 8, 16)  | As defined in [30]                               |         |
| >>>Midamble Shift                             | CV-UE |          | Integer(015  |  |         |
| >>>Type 2                                     |       |          |  |  |         |
| >>>>Midamble Allocation Mode                  | MP    |          | Enumerated (Default midamble, Common midamble, UE specific midamble)                   |  |         |
| >>>Midamble configuration burst type 2        | MP    |          | Integer(3, 6)  | As defined in [30]                               |         |
| >>>>Midamble Shift                            | CV-UE |          | Integer(05)  |  |         |
| >>>Type 3                                     |       |          |  |  |         |
| >>>>Midamble Allocation Mode                  | MP    |          | Enumerated<br>(Default<br>midamble,<br>UE specific<br>midamble)                        |  |         |
| >>>>Midamble configuration burst type 1 and 3 | MP    |          | Integer(4, 8, 16)  | As defined in [30]                               |         |
| >>>>Midamble Shift                            | CV-UE |          | Integer<br>(015)   | NOTE: Burst Type<br>3 is only used in<br>uplink. |         |
| >>> MBSFN Burst Type                          |       |          |  | (no data) DL only                                | REL-7   |
| >7.68 Mcps TDD                                |       |          |  |  | REL-7   |
| >>CHOICE Burst Type                           | MP    |          |  |  | REL-7   |
| >>>Type 1                                     |       |          |  |  | REL-7   |
| >>>>Midamble Allocation Mode                  | MP    |          | Enumerated<br>(Default<br>midamble,<br>Common<br>midamble,<br>UE specific<br>midamble) |  | REL-7   |
| >>>Midamble configuration burst type 1 and 3  | MP    |          | Integer(4, 8, 16)  | As defined in [30]                               | REL-7   |
| >>>Midamble Shift                             | CV-UE |          | Integer(015  |  | REL-7   |
| >>>Type 2                                     |       |          |  |  | REL-7   |
| >>>>Midamble Allocation Mode                  | MP    |          | Enumerated (Default midamble, Common midamble, UE specific midamble)                   |  | REL-7   |
| >>>>Midamble configuration burst type 2       | MP    |          | Integer(4, 8)  | As defined in [30]                               | REL-7   |
| >>>>Midamble Shift                            | CV-UE |          | Integer(07)  |  | REL-7   |
| >>>Type 3                                     |       | <u> </u> |  |  | REL-7   |

| Information Element/Group name               | Need  | Multi | Type and reference   | Semantics description                            | Version |
|--|-------|-------|--|--|---------|
| >>>>Midamble Allocation Mode                 | MP    |       | Enumerated<br>(Default<br>midamble,<br>UE specific<br>midamble)                        |  | REL-7   |
| >>>Midamble configuration burst type 1 and 3 | MP    |       | Integer(4, 8, 16)  | As defined in [30]                               | REL-7   |
| >>>>Midamble Shift                           | CV-UE |       | Integer<br>(015)   | NOTE: Burst Type<br>3 is only used in<br>uplink. | REL-7   |
| >>> MBSFN Burst Type                         |       |       |  | (no data) DL only                                | REL-7   |
| >1.28 Mcps TDD                               |       |       |  |  | REL-4   |
| >>Midamble Allocation Mode                   | MP    |       | Enumerated<br>(Default<br>midamble,<br>Common<br>midamble,<br>UE specific<br>midamble) |  | REL-4   |
| >>Midamble configuration                     | MP    |       | Integer(2, 4,<br>6, 8, 10, 12,<br>14, 16)  | As defined in [30]                               | REL-4   |
| >>Midamble Shift                             | CV-UE |       | Integer<br>(015)   |  | REL-4   |

| Condition | Explanation   |  |  |
|-----------|---|--|--|
| UE        | This IE is mandatory present when the value of the IE |  |  |
|           | "Midamble Allocation Mode" is "UE-specific            |  |  |
|           | midamble" and not needed otherwise.                   |  |  |

## 10.3.6.41a MIMO parameters

| Information Element/Group name   | Need | Multi | Type and reference   | Semantics<br>description   | Version |
|----------------------------------|------|-------|--|--|---------|
| MIMO operation                   | MP   |       | Enumerated (start, continue)   | description  | REL-7   |
| MIMO N_cqi_typeA/M_cqi ratio     | OP   |       | Enumerated(<br>1/2, 2/3, 3/4,<br>4/5, 5/6, 6/7,<br>7/8, 8/9,<br>9/10, 1/1) |  | REL-7   |
| MIMO pilot configuration         | OP   |       | MIMO pilot<br>configuration<br>10.3.6.41b                                  |  | REL-7   |
| Precoding weight set restriction | OP   |       | Enumerated<br>(TRUE)   | If present and MIMO operation is set to start, the UE starts using precoding weight set restriction. | REL-7   |

# 10.3.6.41b MIMO pilot configuration

| Information Element/Group      | Need | Multi | Type and   | Semantics                | Version |
|--------------------------------|------|-------|------------|--------------------------|---------|
| name                           |      |       | reference  | description              |         |
| CHOICE Second CPICH pattern    | MP   |       |            |                          | REL-7   |
| >Antenna2 P-CPICH              |      |       |            | (no data)                | REL-7   |
| >Antenna1 S-CPICH              |      |       |            |                          | REL-7   |
| >>Channelisation code          | MP   |       | Integer    |                          | REL-7   |
|                                |      |       | (0255)     |                          |         |
| >>Power Offset for S-CPICH for | OP   |       | Integer(-6 | Power offset relative to | REL-7   |

| Information Element/Group name | Need | Multi | Type and reference | Semantics<br>description   | Version |
|--------------------------------|------|-------|--------------------|----------------------------|---------|
| MIMO                           |      |       | 0)                 | the P-CPICH Tx power in dB |         |

## 10.3.6.41c Non-scheduled transmission grant info (TDD only)

| Information Element/Group name           | Need                       | Multi | Type and reference   | Semantics<br>description   | Version |
|--|----------------------------|-------|--|--|---------|
| CHOICE TDD Option                        |                            |       | 1010101100   | decempation  | REL-7   |
| >3.84/7.68 Mcps TDD                      |                            |       |  |  | REL-7   |
| >>Timeslot Resource Related InformationI | MP                         |       | Bltstring (13)   | Bitmap indicating which of the timeslots configured for E-DCH are allocated for non-scheduled transmissions  | REL-7   |
| >>Power Resource Related Information     | MP                         |       | Integer<br>(1 32)  | Specifies the maximum allowed E-PUCH resource that the UE may use [15].  | REL-7   |
| >>Activation Time                        | MP                         |       | Activation time 10.3.3.1   |  | REL-7   |
| >>Repetition period and length           | MD                         |       |  | Default is "Repetition period" = 1 (continuous)  | REL-7   |
| >>>Repetition period                     | MP                         |       | Integer (1, 2,<br>4, 8, 16, 32,<br>64)                             | Periodicity in terms of TTIs for which resource is allocated. 1= continuous dallocation, 2 indicates every other TTI, 4 = every 4 <sup>th</sup> , 8 every 8 <sup>th</sup> etc. | REL-7   |
| >>>Repetition Length                     | MP                         |       | Integer<br>(1Repetitio<br>n period-1)                              | TTI in which resource is assigned. If Repetition period = 1 then value is ignored  | REL-7   |
| >>Code Resource Information              | MP                         |       | Enumerated ((1/1),(2/1),(2/2),(4/1)(4/4),(8/1)(8/8),(16/1)(16/16)) |  | REL-7   |
| >1.28 Mcps TDD                           | MB                         |       | 1. (   | N  | REL-7   |
| >>N <sub>E-UCCH</sub>                    | MD                         |       | Integer (18)   | Number of E-<br>UCCH and TPC<br>instances within<br>an E-DCH TTI.<br>Default = 1.  | REL-7   |
| >>Nе-нісн                                | CV-<br>Scheduled<br>E-PUCH |       | Integer(415  | Minimum number of slots between start last active slot of E-DCH TTI and start of ACK/NACK on E-HICH.   | REL-7   |
| >>Timeslot Resource Related InformationI | MP                         |       | Bltstring (5)  | Bitmap indicating which of the timeslots configured for E-DCH are allocated for non-scheduled transmissions  | REL-7   |
| >>Power Resource Related Information     | MP                         |       | Integer (1<br>32)  | Indicates 0-31<br>PRRI index   | REL-7   |

|  |          |   |                          | defined in [31],                |        |
|--|----------|---|--------------------------|---------------------------------|--------|
|  |          |   |                          | which specifies                 |        |
|  |          |   |                          | the maximum                     |        |
|  |          |   |                          | allowed E-PUCH                  |        |
|  |          |   |                          | resource that the               |        |
|  |          |   |                          | UE may use [15].                |        |
| >>Activation Time  | MP       |   | Activation               | Specifies the E-                | REL-7  |
|  |          |   | time 10.3.3.1            | PUCH Offset in                  |        |
|  |          |   |                          | Radio Frame                     |        |
|  |          |   |                          | level.                          |        |
| >>Subframe number  | MP       |   | Integer (01)             | Specifies the E-                | REL-7  |
|  |          |   |                          | PUCH Offset in                  |        |
|  |          |   |                          | subframe level.                 |        |
| >>Repetition period and length   | MD       |   |                          | Default is                      | REL-7  |
| 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1   |          |   |                          | "Repetition                     |        |
|  |          |   |                          | period" = 1                     |        |
|  |          |   |                          | (continuous)                    |        |
| >>>Repetition period   | MP       |   | Integer (1, 2,           | Periodicity in                  | REL-7  |
| >>>Tepetition period   | 1411     |   | 4, 8, 16, 32,            | terms of TTIs for               |        |
|  |          |   | 64)                      | which resource is               |        |
|  |          |   | 07)                      | allocated. 1=                   |        |
|  |          |   |                          | continuous                      |        |
|  |          |   |                          |                                 |        |
|  |          |   |                          | allocation, 2                   |        |
|  |          |   |                          | indicates every                 |        |
|  |          |   |                          | other TTI, 4 =                  |        |
|  |          |   |                          | every 4 <sup>th</sup> , 8 every |        |
| D (11 1 11   | L L      |   |                          | 8 <sup>th</sup> etc.            | DEL -  |
| >>>Repetition Length   | MP       |   | Integer(1Re              | TTI in which                    | REL-7  |
|  |          |   | petition                 | resource is                     |        |
|  |          |   | period-1)                | assigned. If                    |        |
|  |          |   |                          | Repetition period               |        |
|  |          |   |                          | = 1 then value is               |        |
|  |          |   |                          | ignored                         |        |
| >>Code Resource Information  | MP       |   | Enumerated               |                                 | REL-7  |
|  |          |   | ((1/1),(2/1),(           |                                 |        |
|  |          |   | 2/2),(4/1)(4/            |                                 |        |
|  |          |   | 4),(8/1)(8/8)            |                                 |        |
|  |          |   | ,(16/1)(16/1             |                                 |        |
|  |          |   | 6))                      |                                 |        |
| >>E-HICH Information   |          |   |                          |                                 | REL-7  |
| >>>Timeslot number   | MP       |   | Integer (06)             |                                 | REL-7  |
| >>>Channelisation code   | MP       |   | Enumerated               |                                 | REL-7  |
|  |          |   | ((16/1)(16/1             |                                 |        |
|  |          |   | 6))                      |                                 |        |
| >>>Midamble Allocation mode  | MP       |   | Enumerated               |                                 | REL-7  |
| and the same of th | 1        |   | (Default                 |                                 | ' ' '  |
|  |          |   | midamble,                |                                 |        |
|  |          |   | UE specific              |                                 |        |
|  |          |   | midamble)                |                                 |        |
| >>>Midamble configuration  | MP       | 1 | Integer (2, 4,           |                                 | REL-7  |
|  | IVII     |   |                          |                                 | INLL-1 |
|  |          |   | 6, 8, 10, 12,<br>14, 16) |                                 |        |
| Midomblo Chit  | CV-UE    | 1 |                          |                                 | REL-7  |
| >>>Midamble Shift  |          |   | Integer                  |                                 | KEL-/  |
| Cimpoters Or see   | specific | 1 | (015)                    |                                 | DEL 7  |
| >>>Signature Sequence Group  | MP       |   | Integer                  |                                 | REL-7  |
| Index  |          |   | (019)                    |                                 |        |
| >>T-SI-NST   | CV-E-    |   | Enumerated               | Values in ms.                   | REL-7  |
|  | RUCCH    |   | (everyEDCH               | If T-SI-NST                     |        |
|  | info     |   | TTI,                     | expires then UE                 |        |
|  |          |   | 20,40,60,80,             | should include                  |        |
|  |          |   | 160,200)                 | scheduling                      |        |
|  |          |   |                          | information in the              |        |
|  |          |   |                          | next new non-                   |        |
|  |          |   |                          | scheduled MAC-e                 |        |
| Î  | 1        |   |                          | PDU.                            |        |
|  |          |   |                          | I FDU.                          |        |

| Condition        | Explanation  |
|------------------|--|
| Scheduled E-PUCH | If NE-HICH is given in scheduled E-PUCH                |
|                  | information, this IE is not needed, otherwise it is    |
|                  | mandatory  |
| UE specific      | If UE specific midamble allocation mode is             |
|                  | configured, this IE is mandatory, otherwise it is      |
|                  | not needed.  |
| E-RUCCH info     | This IE is optionally present if the IE "E-RUCCH Info" |
|                  | is not included, otherwise the IE is not needed.       |

## 10.3.6.42 PDSCH Capacity Allocation info

NOTE: Only for TDD.

| Information Element/Group name | Need | Multi | Type and reference                          | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| PDSCH allocation period info   | MP   |       | Allocation<br>Period Info<br>10.3.6.4       |                       |
| CHOICE Configuration           | MP   |       |   |                       |
| >Old configuration             |      |       |   |                       |
| >>TFCS ID                      | MD   |       | Integer(18)                                 | Default is 1.         |
| >>PDSCH Identity               | MP   |       | Integer(1hi<br>PDSCHident<br>ities)         |                       |
| >New configuration             |      |       |   |                       |
| >>PDSCH Info                   | MP   |       | PDSCH Info<br>10.3.6.44                     |                       |
| >>PDSCH Identity               | OP   |       | Integer(1hi<br>PDSCHident<br>ities)         |                       |
| >>PDSCH power control info     | OP   |       | PDSCH<br>power<br>control info<br>10.3.6.45 |                       |

### 10.3.6.43 Void

#### 10.3.6.44 PDSCH info

NOTE: Only for TDD.

| Information Element/Group name                                    | Need | Multi | Type and reference                                      | Semantics description                          | Version |
|---|------|-------|---|--|---------|
| TFCS ID   | MD   |       | Integer(18)   | TFCS to be used. Default value is 1.           |         |
| Common timeslot info  | OP   |       | Common timeslot info 10.3.6.10                          |  |         |
| PDSCH timeslots and codes<br>for1.28 Mcps TDD or 3.84 Mcps<br>TDD | OP   |       | Downlink<br>Timeslots<br>and Codes<br>10.3.6.32         | Default is to use the old timeslots and codes. |         |
| PDSCH timeslots and codes for 7.68 Mcps TDD                       | OP   |       | Downlink<br>Timeslots<br>and Codes<br>VHR<br>10.3.6.32a | Default is to use the old timeslots and codes. | REL-7   |

#### 10.3.6.45 PDSCH Power Control info

NOTE: Only for TDD.

| Information Element/Group name | Need | Multi                           | Type and reference                                  | Semantics description  |
|--------------------------------|------|---------------------------------|---|--|
| TPC Step Size                  | OP   |                                 | Integer<br>(1, 2, 3)                                | In dB  |
| UL CCTrCH TPC List             | OP   | 1 <maxcc<br>TrCH&gt;</maxcc<br> |   | UL CCTrCH identities for TPC commands associated with this DL CCTrCH.  This list is not used in 1.28 Mcps TDD. |
| >UL TPC TFCS Identity          | MP   |                                 | Transport Format Combination Set Identity 10.3.5.21 |  |

## 10.3.6.46 PDSCH system information

NOTE: Only for TDD.

| Information<br>Element/Group name  | Need           | Multi                                | Type and reference                                      | Semantics description   | Version |
|------------------------------------|----------------|--------------------------------------|---|---|---------|
| PDSCH information                  | MP             | 1 to<br><maxpd<br>SCH&gt;</maxpd<br> |   |   |         |
| >PDSCH Identity                    | MP             |                                      | Integer(1<br>hiPDSCHi<br>dentities)                     |   |         |
| >PDSCH info                        | MP             |                                      | PDSCH<br>info<br>10.3.6.44                              |   |         |
| >SFN Time Info                     | CH-<br>Block17 |                                      | SFN Time<br>Info<br>10.3.6.75                           |   |         |
| >DSCH TFS                          | OP             |                                      | Transport format set 10.3.5.23                          |   |         |
| >DSCH Transport<br>Channels        | OP             | 1 to<br><maxtr<br>CH&gt;</maxtr<br>  |   | If PDSCH is configured<br>for 3.84Mcps TDD in<br>Rel-5 or for 7.68 Mcps<br>in Rel-7 this IE may be<br>included. | REL-5   |
| >> DSCH Transport channel identity | MP             |                                      | Transport<br>channel<br>identity<br>10.3.5.18           |   | REL-5   |
| >>DSCH TFS                         | MP             |                                      | Transport format set 10.3.5.23                          |   | REL-5   |
| >DSCH TFCS                         | OP             |                                      | Transport<br>Format<br>Combinati<br>on Set<br>10.3.5.20 |   |         |

| Condition | Explanation   |
|-----------|---|
| Block17   | This IE is not needed in System Information Block 17. |
|           | Otherwise it is optional.                             |

#### 10.3.6.47 Void

## 10.3.6.48 Persistence scaling factors

This IE defines scaling factors associated with ASC 2 – ASC 7 to be applied to the dynamic persistence value.

| Information Element/Group name | Need | Multi                     | Type and reference                  | Semantics description  |
|--------------------------------|------|---------------------------|-------------------------------------|--|
| Access Service Class           | MP   | 1 to<br>maxASCpe<br>rsist |                                     | multiplicity corresponds to the number of PRACH partitions minus 2 |
| >Persistence scaling factor    | MP   |                           | Real(0.90.2<br>, by step of<br>0.1) | Scaling factors in the range 0,,1                                  |

#### 10.3.6.49 PICH Info

| Information Element/Group name  | Need | Multi | Type and reference                                      | Semantics description   | Version |
|---------------------------------|------|-------|---|---|---------|
| CHOICE mode                     | MP   |       |   |   |         |
| >FDD                            |      |       |   |   |         |
| >>Channelisation code           | MP   |       | Integer(025<br>5)                                       | SF is fixed and equal to 256  |         |
| >>Number of PI per frame        | MP   |       | Integer (18, 36, 72, 144)                               |   |         |
| >>STTD indicator                | MP   |       | STTD<br>Indicator<br>10.3.6.78                          |   |         |
| >TDD                            |      |       |   |   |         |
| >>Timeslot number               | MD   |       | Timeslot<br>number<br>10.3.6.84                         | Default value is the timeslot used by the SCCPCH carrying the associated PCH.                           |         |
| >>Midamble shift and burst type | MP   |       | Midamble<br>shift and<br>burst type<br>10.3.6.41        |   |         |
| >>CHOICE TDD option             | MP   |       |   |   | REL-4   |
| >>>3.84 Mcps TDD                |      |       |   |   | REL-4   |
| >>>Channelisation code          | MD   |       | Enumerated ( (16/1)(16/1 6))                            | Default value is<br>the channelisation<br>code used by the<br>SCCPCH carrying<br>the associated<br>PCH. |         |
| >>>7.68 Mcps TDD                |      |       |   |   | REL-7   |
| >>>Channelisation code          | MD   |       | Enumerated (<br>(32/1)(32/3<br>2))                      | Default value is<br>the channelisation<br>code used by the<br>SCCPCH carrying<br>the associated<br>PCH. | REL-7   |
| >>>1.28 Mcps TDD                |      |       |   |   | REL-4   |
| >>>Codes list                   | MP   | 12    |   |   | REL-4   |
| >>>>Channelisation code         | MP   |       | Enumerated ( (16/1)(16/1 6))                            |   | REL-4   |
| >>Repetition period/length      | MD   |       | Enumerated(<br>(4/2),(8/2),<br>(8/4),(16/2),<br>(16/4), | Default value is "(64/2)".  |         |

|                           |    | (32/2),(32/4),<br>(64/2),(64/4))       |   |
|---------------------------|----|--|---|
| >>Offset                  | MP | Integer<br>(0Repetitio<br>n period -1) | SFN mod Repetitionperiod = Offset.  |
| >>Paging indicator length | MD | Integer (4, 8,<br>16)                  | Indicates the length of one paging indicator in Bits. Default value is 4.   |
| >>N <sub>GAP</sub>        | MD | Integer(2, 4, 8)                       | Number of frames between the last frame carrying PICH for this Paging Occasion and the first frame carrying paging messages for this Paging Occasion. Default value is 4. |
| >>N <sub>PCH</sub>        | MD | Integer(1<br>8)                        | Number of paging groups. Default value is 2.  |

#### 10.3.6.50 PICH Power offset

This is the power transmitted on the PICH minus power of the Primary CPICH in FDD and Primary CCPCH Tx Power in TDD.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| PICH Power offset              | MP   |       | Integer(-10<br>+5) | Offset in dB          |

#### 10.3.6.50a PLCCH Info

NOTE: Only for 1.28 Mcps TDD

| Information<br>Element/Group name | Need | Multi | Type and reference                       | Semantics<br>description                   |
|-----------------------------------|------|-------|--|--|
| PLCCH sequence number             | М    |       | Integer(1<br>14)                         |  |
| Timeslot number                   | М    |       | Integer(0<br>6)                          |  |
| Channelisation Code               | M    |       | Enumerate<br>d((16/1)(1<br>6/16))        |  |
| TPC command target rate           | М    |       | Real(0.01<br>0.1 by<br>steps of<br>0.01) | Transmit Power Control command target rate |

#### 10.3.6.51 PRACH Channelisation Code List

NOTE: Only for 3.84 Mcps TDD.

| Information Element/Group name | Need | Multi  | Type and reference | Semantics description | Version |
|--------------------------------|------|--------|--------------------|-----------------------|---------|
| CHOICE SF                      | MP   |        |                    |                       |         |
| >SF16                          |      |        |                    |                       |         |
| >>Channelisation Code List     | MP   | 1 to 8 |                    |                       |         |
| >>>Channelisation code         | MP   |        | Enumerated         | There is a 1:1        |         |

| Information Element/Group name | Need | Multi  | Type and reference         | Semantics description  | Version |
|--------------------------------|------|--------|----------------------------|--|---------|
| name                           |      |        | ((16/1)(16/<br>16))        | mapping between spreading code and midamble shift defined in [30] for channelisation codes (16/1) to (16/8).  NOTE: channelisation codes (16/9) to |         |
|                                |      |        |                            | (16/16) are not to be used.  |         |
| >SF8                           |      |        |                            |  |         |
| >>Channelisation Code List     | MP   | 1 to 8 |                            |  |         |
| >>>Channelisation Code         | MP   |        | Enumerated(<br>(8/1)(8/8)) |  |         |

## 10.3.6.51a PRACH Channelisation Code 1.28 Mcps TDD

NOTE: Only for 1.28 Mcps TDD.

| Information Element/Group name | Need | Multi  | Type and reference  | Semantics description | Version |
|--------------------------------|------|--------|---|-----------------------|---------|
| Channelisation Code List       | MP   | 1 to 4 |   |                       | REL-4   |
| >Channelisation Code           | MP   |        | Enumerated(<br>(4/1)(4/4),(8<br>/1)(8/8),(16/<br>1)(16/16)) |                       | REL-4   |

## 10.3.6.51b PRACH Channelisation Code List VHCR

NOTE: Only for 7.68 Mcps TDD.

| Information Element/Group name | Need | Multi   | Type and reference         | Semantics description   | Version |
|--------------------------------|------|---------|----------------------------|---|---------|
| CHOICE SF                      | MP   |         |                            | •   | REL-7   |
| >SF32                          |      |         |                            |   | REL-7   |
| >>Channelisation Code List     | MP   | 1 to 16 |                            |   | REL-7   |
| >>>Channelisation code         | MP   |         | Enumerated ((32/1)(32/32)) | There is a 1:1 mapping between spreading code and midamble shift defined in [30] for channelisation codes (32/1) to (32/16).  NOTE: channelisation codes (32/17) to (32/32) are not to be used. | REL-7   |
| >SF16                          |      |         |                            |   | REL-7   |
| >>Channelisation Code List     | MP   | 1 to 16 |                            |   | REL-7   |
| >>>Channelisation code         | MP   |         | Enumerated ((16/1)(16/16)) | There is a 1:1<br>mapping between<br>spreading code<br>and midamble<br>shift defined in   | REL-7   |

| Information Element/Group | Need | Multi | Type and  | Semantics  | Version |
|---------------------------|------|-------|-----------|--|---------|
| name                      |      |       | reference | description                                      |         |
|                           |      |       |           | [30] for channelisation codes (16/1) to (16/16). |         |

## 10.3.6.52 PRACH info (for RACH)

| Information Element/Group name        | Need | Multi | Type and reference                                 | Semantics description   | Version |
|---------------------------------------|------|-------|--|---|---------|
| CHOICE mode                           | MP   |       |  | •   |         |
| >FDD                                  |      |       |  |   |         |
| >>Available Signature                 | MP   |       | Bit string(16)                                     | Each bit indicates availability for a signature, where the signatures are numbered "signature 0" up to "signature 15". The value 1 of a bit indicates that the corresponding signature is available and the value 0 that it is not available.             |         |
| >>Available SF                        | MP   |       | Integer<br>(32,64,128,2<br>56)                     | In chips per<br>symbol<br>Defines the<br>minimum allowed<br>SF (i.e. the<br>maximum rate)   |         |
| >>Preamble scrambling code number     | MP   |       | Integer (0<br>15)                                  | Identification of scrambling code see [28]  |         |
| >>Puncturing Limit                    | MP   |       | Real(0.401.<br>00 by step of<br>0.04)              |   |         |
| >>Available Sub Channel Number        | MP   |       | Bit string(12)                                     | Each bit indicates availability for a subchannel, where the subchannels are numbered "subchannel 0" to "subchannel 11". The value 1 of a bit indicates that the corresponding subchannel is available and the value 0 indicates that it is not available. |         |
| >TDD                                  | 1    |       |  |   |         |
| >>CHOICE TDD option                   | MP   |       |  |   | REL-4   |
| >>>3.84 Mcps TDD  >>>>Timeslot number | MP   |       | Timeslot<br>number<br>10.3.6.84                    |   | REL-4   |
| >>>>PRACH Channelisation<br>Code List | MP   |       | PRACH<br>Channelisati<br>on Code List<br>10.3.6.51 |   |         |

| >>>>PRACH Midamble           | MP   | T   | Enumerated         | Direct or direct  |          |
|------------------------------|------|---|--------------------|-------------------|----------|
| 77771 TO TOTAL WINGCOME      | 1411 |   | (Direct.           | and inverted      |          |
|                              |      |   | Direct/Invert      | midamble are      |          |
|                              |      |   | ed)                | used for PRACH    |          |
| >>>>PNBSCH allocation        | OP   |   | PNBSCH             | Identifies frames | REL-4    |
|                              |      |   | allocation         | used for cell     |          |
|                              |      |   | 10.3.8.10a         | synchronisation   |          |
|                              |      |   |                    | purposes          |          |
| >>>7.68 Mcps TDD             |      |   |                    |                   | REL-7    |
| >>>>Timeslot number          | MP   |   | Timeslot           |                   | REL-7    |
|                              |      |   | number             |                   |          |
|                              |      |   | 10.3.6.84          |                   |          |
| >>>>PRACH Channelisation     | MP   |   | PRACH              |                   | REL-7    |
| Code List VHCR               |      |   | Channelisati       |                   |          |
|                              |      |   | on Code List       |                   |          |
|                              |      |   | VHCR               |                   |          |
|                              |      |   | 10.3.6.51b         |                   |          |
| >>>PRACH Midamble            | MP   |   | Enumerated         | Direct or direct  | REL-7    |
|                              |      |   | (Direct,           | and inverted      |          |
|                              |      |   | Direct/Invert      | midamble are      |          |
|                              |      |   | ed)                | used for PRACH    | <u> </u> |
| >>>PNBSCH allocation         | OP   |   | PNBSCH             | Identifies frames | REL-7    |
|                              |      |   | allocation         | used for cell     |          |
|                              |      |   | 10.3.8.10a         | synchronisation   |          |
| 4.00 Mars - TDD              |      |   |                    | purposes          | DEL 4    |
| >>>1.28 Mcps TDD             | MD   |   | 0)/NO 111          |                   | REL-4    |
| >>>SYNC_UL info              | MP   |   | SYNC_UL            |                   | REL-4    |
|                              |      |   | info<br>10.3.6.78a |                   |          |
| >>>PRACH Definition          | MP   | 1 <maxpr< td=""><td>10.3.6.768</td><td></td><td>REL-4</td></maxpr<> | 10.3.6.768         |                   | REL-4    |
| >>>>FRACTI Dell'Illion       | IVIF | ACH_FPA   |                    |                   | NEL-4    |
|                              |      | CH>   |                    |                   |          |
| >>>>Timeslot number          | MP   | 0112  | Timeslot           |                   | REL-4    |
| /// Timesiot Hamber          | IVII |   | number             |                   | IXEL 4   |
|                              |      |   | 10.3.6.84          |                   |          |
| >>>>PRACH Channelisation     | MP   | 1   | PRACH              |                   | REL-4    |
| Code                         |      |   | Channelisati       |                   |          |
|                              |      |   | on Code            |                   |          |
|                              |      |   | 1.28 Mcps          |                   |          |
|                              |      |   | TDD                |                   |          |
|                              |      |   | 10.3.6.51a         |                   |          |
| >>>>Midamble Shift and burst | MP   |   | Midamble           |                   | REL-4    |
| type                         |      |   | shift and          |                   |          |
|                              |      |   | burst type         |                   |          |
|                              |      | 1   | 10.3.6.41          |                   | 1        |
| >>>>FPACH info               | MP   |   | FPACH info         |                   | REL-4    |
|                              |      |   | 10.3.6.35a         |                   |          |

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## 10.3.6.53 PRACH partitioning

| Information Element/Group name | Need | Multi          | Type and reference   | Semantics description   |
|--------------------------------|------|----------------|----------------------|---|
| Access Service class           | MP   | 1 to<br>maxASC |                      | If only "NumASC+1" (with,<br>NumASC+1 < maxASC) ASCs<br>are listed, the remaining<br>(NumASC+2 through<br>maxASC) ASCs are<br>unspecified.  |
| >ASC Setting                   | MD   |                | ASC setting 10.3.6.6 | The default values are same as the previous ASC. If the "default" is used for the first ASC, the default values are all available signatures and "all available subchannels" for FDD and "all available channelisation codes" and "all available subchannels" with "subchannel size=Size 1" in TDD. |

## 10.3.6.54 PRACH power offset

NOTE: Only for FDD.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description                                      |
|--------------------------------|------|-------|--------------------|--|
| Power Ramp Step                | MP   |       | Integer (18)       | Power step when no acquisition indicator is received in dB |
| Preamble Retrans Max           | MP   |       | Integer<br>(164)   | Maximum number of preambles in one preamble ramping cycle  |

## 10.3.6.55 PRACH system information list

| Information element           | Need | Multi                              | Type and reference                              | Semantics description   | Version |
|-------------------------------|------|------------------------------------|---|---|---------|
| PRACH system information      | MP   | 1<br><maxpra<br>CH&gt;</maxpra<br> |   |   |         |
| >PRACH info                   | MP   |                                    | PRACH info<br>(for RACH)<br>10.3.6.52           |   |         |
| >Transport channel identity   | MP   |                                    | Transport<br>channel<br>identity<br>10.3.5.18   |   |         |
| >RACH TFS                     | MD   |                                    | Transport<br>format set<br>10.3.5.23            | Default value is the value of "RACH TFS" for the previous PRACH in the list NOTE: The first occurrence is then MP). NOTE: For TDD in this release there is a single TF within the RACH TFS. |         |
| >Additional RACH TFS for CCCH | OP   |                                    | Additional Dynamic Transport Format Information | FDD only  | REL-6   |

| Information element             | Need                | Multi | Type and reference                                     | Semantics description  | Version |
|---------------------------------|---------------------|-------|--|--|---------|
|                                 |                     |       | for CCCH<br>10.3.5.2a                                  |  |         |
| >RACH TFCS                      | MD                  |       | Transport<br>Format<br>Combination<br>Set<br>10.3.5.20 | Default value is the value of "RACH TFCS" for the previous PRACH in the list. NOTE: The first occurrence is then MP). NOTE: For TDD in this release there is no TFCS required.                 |         |
| >Additional RACH TFCS for CCCH  | CV-Add-<br>RACH-TFS |       | Additional<br>RACH TFCS<br>for CCCH<br>10.3.5.2b       |  | REL-6   |
| >PRACH partitioning             | MD                  |       | PRACH partitioning 10.3.6.53                           | Default value is the value of<br>"PRACH partitioning" for the<br>previous PRACH in the list<br>(note : the first occurrence is<br>then MP)   |         |
| >Persistence scaling factors    | OP                  |       | Persistence<br>scaling<br>factors<br>10.3.6.48         | This IE shall not be present if only ASC 0 and ASC 1 are defined. If this IE is absent, value is the value of "Persistence scaling factors" for the previous PRACH in the list if value exists |         |
| >AC-to-ASC mapping              | CV-SIB5-<br>MD      |       | AC-to-ASC<br>mapping<br>10.3.6.1                       | Only present in SIB 5 and in SIB 5bis. Default value is the value of "AC-to-ASC mapping" for the previous PRACH in the list. NOTE: The first occurrence is then MP in SIB5 and in SIB5bis.     |         |
| >CHOICE mode                    | MP                  |       |  |  |         |
| >>FDD >>>Primary CPICH TX power | MD                  |       | Primary<br>CPICH TX<br>power<br>10.3.6.61              | Default value is the value of "Primary CPICH TX power" for the previous PRACH in the list. NOTE: The first occurrence is then MP.  |         |
| >>>Constant value               | MD                  |       | Constant<br>value<br>10.3.6.11                         | Default value is the value of "Constant value" for the previous PRACH in the list. NOTE: The first occurrence is then MP.  |         |
| >>>PRACH power offset           | MD                  |       | PRACH<br>power offset<br>10.3.6.54                     | Default value is the value of<br>"PRACH power offset" for the<br>previous PRACH in the list.<br>NOTE: The first occurrence is<br>then MP.  |         |
| >>>RACH transmission parameters | MD                  |       | RACH<br>transmission<br>parameters<br>10.3.6.67        | Default value is the value of "RACH transmission parameters" for the previous PRACH in the list. NOTE: The first occurrence is then MP.  |         |
| >>>AICH info                    | MD                  |       | AICH info<br>10.3.6.2                                  | Default value is the value of "AICH info" for the previous PRACH in the list. NOTE: The first occurrence is then MP.   |         |
| >>TDD                           |                     |       |  | (no data)  |         |

| Condition    | Explanation  |
|--------------|--|
| SIB5-MD      | The information element is present only in SIB 5 and in SIB5bis. In SIB 5 and in SIB 5bis it is mandatory with                       |
|              | default.   |
| Add-RACH-TFS | The information element is MP if the IE "Additional RACH TFS for CCCH" is included. Otherwise the information element is not needed. |

NOTE: If the setting of the PRACH information results in that a combination of a signature, preamble scrambling code and subchannel corresponds to a RACH with different TFS and/or TFCS, then for that combination only the TFS/TFCS of the PRACH listed first is valid, where PRACHs listed in System Information Block type 5 or 5bis shall be counted first.

#### 10.3.6.56 Predefined PhyCH configuration

This information element concerns a pre- defined configuration of physical channel parameters.

| Information Element/Group name                  | Need | Multi | Type and Reference   | Semantics description |
|---|------|-------|--|-----------------------|
| Uplink radio resources                          |      |       |  |                       |
| Uplink DPCH info                                | MP   |       | Uplink<br>DPCH info<br>Pre<br>10.3.6.90                                      |                       |
| Downlink radio resources                        |      |       |  |                       |
| Downlink information common for all radio links | OP   |       | Downlink<br>information<br>common for<br>all radio links<br>Pre<br>10.3.6.26 |                       |

#### 10.3.6.57 Primary CCPCH info

| Information Element/Group name | Need | Multi | Type and reference                | Semantics description                           | Version |
|--------------------------------|------|-------|-----------------------------------|---|---------|
| CHOICE mode                    | MP   |       |                                   | •   |         |
| >FDD                           |      |       |                                   |   |         |
| >>TX Diversity indicator       | MP   |       | Boolean                           | TRUE indicates that transmit diversity is used. |         |
| >TDD                           |      |       |                                   |   |         |
| >>CHOICE TDD option            | MP   |       |                                   |   | REL-4   |
| >>>3.84 and 7.68 Mcps TDD      |      |       |                                   |   | REL-4   |
| >>>>CHOICE SyncCase            | OP   |       |                                   |   |         |
| >>>>Sync Case 1                |      |       |                                   |   |         |
| >>>>Timeslot                   | MP   |       | Integer<br>(014)                  | PCCPCH timeslot                                 |         |
| >>>>Sync Case 2                |      |       |                                   |   |         |
| >>>>>Timeslot                  | MP   |       | Integer(06)                       |   |         |
| >>>1.28 Mcps TDD               |      |       |                                   |   | REL-4   |
| >>>>TSTD indicator             | MP   |       | TSTD indicator 10.3.6.85a         |   | REL-4   |
| >>Cell parameters ID           | OP   |       | Cell<br>parameters<br>Id 10.3.6.9 | The Cell parameters ID is described in [32].    |         |
| >>SCTD indicator               | MP   |       | SCTD<br>indicator<br>10.3.6.70a   |   |         |

## 10.3.6.58 Primary CCPCH info post

NOTE: Only for TDD

| Information Element/Group | Need | Multi | Type and         | Semantics          | Version |
|---------------------------|------|-------|------------------|--------------------|---------|
| name                      |      |       | reference        | description        |         |
| CHOICE TDD option         | MP   |       |                  |                    | REL-4   |
| >3.84 Mcps TDD            |      |       |                  |                    | REL-4   |
| >>CHOICE SyncCase         | MP   |       |                  |                    |         |
| >>>Sync Case 1            |      |       |                  |                    |         |
| >>>>Timeslot              | MP   |       | Integer<br>(014) | PCCPCH timeslot    |         |
| >>>Sync Case 2            |      |       |                  |                    |         |
| >>>>Timeslot              | MP   |       | Integer(06)      |                    |         |
| >7.68 Mcps TDD            |      |       |                  |                    | REL-7   |
| >>CHOICE SyncCase         | MP   |       |                  |                    | REL-7   |
| >>>Sync Case 1            |      |       |                  |                    | REL-7   |
| >>>>Timeslot              | MP   |       | Integer<br>(014) | PCCPCH timeslot    | REL-7   |
| >>>Sync Case 2            |      |       |                  |                    | REL-7   |
| >>>Timeslot               | MP   |       | Integer(06)      |                    | REL-7   |
| >1.28 Mcps TDD            |      |       |                  |                    | REL-4   |
| >>TSTD indicator          | MP   |       | TSTD             |                    | REL-4   |
|                           |      |       | indicator        |                    |         |
|                           |      |       | 10.3.6.85a       |                    |         |
| Cell parameters ID        | MP   |       | Cell             | The Cell           |         |
|                           |      |       | parameters       | parameters ID is   |         |
|                           |      |       | ld 10.3.6.9      | described in [32]. |         |
| SCTD indicator            | MP   |       | SCTD             |                    |         |
|                           |      |       | indicator        |                    |         |
|                           |      |       | 10.3.6.70a       |                    |         |

# 10.3.6.59 Primary CCPCH TX Power

NOTE: Only for TDD.

| Information Element/group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Primary CCPCH Tx Power         | MP   |       | Integer(643        | In dBm                |

## 10.3.6.60 Primary CPICH info

NOTE: Only for FDD.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Primary scrambling code        | MP   |       | Integer(051<br>1)  |                       |

## 10.3.6.61 Primary CPICH Tx power

NOTE: Only for FDD.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Primary CPICH Tx Power         | MP   |       | Integer(-<br>1050) | Power in dBm.         |

## 10.3.6.62 Primary CPICH usage for channel estimation

NOTE: Only for FDD.

| Information Element/Group name | Need | Multi | Type and Reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Primary CPICH usage for        | MP   |       | Enumerated(        |                       |
| channel estimation             |      |       | Primary            |                       |
|                                |      |       | CPICH may          |                       |
|                                |      |       | be used,           |                       |
|                                |      |       | Primary            |                       |
|                                |      |       | CPICH shall        |                       |
|                                |      |       | not be used)       |                       |

#### 10.3.6.63 PUSCH info

NOTE: Only for 1.28 Mcps and 3.84 Mcps TDD.

| Information Element/Group name | Need | Multi | Type and reference                            | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| TFCS ID                        | MD   |       | Integer(18)                                   | Default value is 1    |
| Common timeslot info           | OP   |       | Common timeslot info 10.3.6.10                |                       |
| PUSCH timeslots and codes      | OP   |       | Uplink<br>Timeslots<br>and Codes<br>10.3.6.94 |                       |

#### 10.3.6.63a PUSCH info VHCR

NOTE: Only 7.68 Mcps TDD (REL-7).

| Information Element/Group name | Need | Multi | Type and reference                                     | Semantics description | Version |
|--------------------------------|------|-------|--|-----------------------|---------|
| TFCS ID                        | MD   |       | Integer(18)  | Default value is 1    | REL-7   |
| Common timeslot info           | OP   |       | Common<br>timeslot info<br>10.3.6.10                   |                       | REL-7   |
| PUSCH timeslots and codes VHCR | OP   |       | Uplink<br>Timeslots<br>and Codes<br>VHCR<br>10.3.6.94b |                       | REL-7   |

## 10.3.6.64 PUSCH Capacity Allocation info

NOTE: Only for TDD.

| Information Element/Group name                      | Need | Multi | Type and reference                          | Semantics description | Version |
|---|------|-------|---|-----------------------|---------|
| CHOICE PUSCH allocation                             | MP   |       |   |                       |         |
| >PUSCH allocation pending                           |      |       |   | (no data)             |         |
| >PUSCH allocation assignment                        |      |       |   |                       |         |
| >>PUSCH allocation period info                      | MP   |       | Allocation<br>Period Info<br>10.3.6.4       |                       |         |
| >>PUSCH power control info                          | OP   |       | PUSCH<br>power<br>control info<br>10.3.6.65 |                       |         |
| >>CHOICE Configuration                              | MP   |       |   |                       |         |
| >>>Old configuration                                |      |       |   |                       |         |
| >>>>TFCS ID   | MD   |       | Integer(18)                                 | Default is 1.         |         |
| >>>>PUSCH Identity                                  | MP   |       | Integer(1hi<br>PUSCHident<br>ities)         |                       |         |
| >>>New 1.28 Mcps TDD or 3.84 Mcps TDD configuration |      |       |   |                       |         |
| >>>>PUSCH info                                      | MP   |       | PUSCH info<br>10.3.6.63                     |                       |         |
| >>>>PUSCH Identity                                  | OP   |       | Integer(1<br>hiPUSCHide<br>ntities)         |                       |         |
| >>>New 7.68 Mcps TDD configuration                  |      |       |   |                       | REL-7   |
| >>>PUSCH info VHCR                                  | MP   |       | PUSCH info<br>VHCR<br>10.3.6.63a            |                       | REL-7   |
| >>>PUSCH Identity                                   | OP   |       | Integer(1<br>hiPUSCHide<br>ntities)         |                       | REL-7   |

#### 10.3.6.65 PUSCH power control info

NOTE: Only for TDD.

Interference level measured for a frequency at the UTRAN access point used by UE to set PUSCH output power.

| Information Element/Group | Need | Multi | Type and      | Semantics         | Version |
|---------------------------|------|-------|---------------|-------------------|---------|
| name                      |      |       | reference     | description       |         |
| UL target SIR             | MP   |       | Real (-11     |                   |         |
|                           |      |       | 20 by step of | For 1.28 Mcps     | REL-4   |
|                           |      |       | 0.5 dB)       | TDD this          |         |
|                           |      |       |               | parameter         |         |
|                           |      |       |               | represents        |         |
|                           |      |       |               | PRXPUSCHdes       |         |
|                           |      |       |               | with range        |         |
|                           |      |       |               | Integer(-12058    |         |
|                           |      |       |               | by step of 1) dBm |         |
| CHOICE TDD option         | MP   |       |               |                   | REL-4   |
| >3.84 Mcps TDD            |      |       |               | (no data)         | REL-4   |
| >7.68 Mcps TDD            |      |       |               | (no data)         | REL-7   |
| >1.28 Mcps TDD            |      |       |               |                   | REL-4   |
| >>TPC Step Size           | OP   |       | Integer       | In dB             | REL-4   |
|                           |      |       | (1, 2, 3)     |                   |         |

| Information Element/Group | Need | Multi | Type and          | Semantics  | Version |
|---------------------------|------|-------|-------------------|--|---------|
| name                      |      |       | reference         | description  |         |
| >>Beacon PL Est.          | OP   |       | Enumerated (true) | The presence of this IE indicates that the UE may take into account path loss estimated from beacon function physical channels. The absence indicates that UE may not take into account path loss estimated from beacon function | REL-6   |
|                           |      |       |                   | physical channels  |         |

## 10.3.6.66 PUSCH system information

NOTE: Only for 1.28 Mcps or 3.84 Mcps TDD.

| Information<br>Element/Group name  | Need           | Multi                                | Type and reference                                      | Semantics description  | Version |
|------------------------------------|----------------|--------------------------------------|---|--|---------|
| PUSCH information                  | MP             | 1 to<br><maxpu<br>SCH&gt;</maxpu<br> |   |  |         |
| >PUSCH Identity                    | MP             |                                      | Integer(1 hiPUSCHi dentities)                           |  |         |
| >PUSCH info                        | MP             |                                      | PUSCH<br>info<br>10.3.6.63                              |  |         |
| >SFN Time Info                     | CH-<br>Block17 |                                      | SFN Time<br>Info<br>10.3.6.75                           |  |         |
| >USCH TFS                          | OP             |                                      | Transport format set 10.3.5.23                          |  |         |
| >USCH Transport<br>Channels        | OP             | 1 to<br><maxtr<br>CH&gt;</maxtr<br>  |   | If PUSCH is configured for 3.84 Mcps TDD in Rel-5 this IE may be included. | REL-5   |
| >> USCH Transport channel identity | MP             |                                      | Transport<br>channel<br>identity<br>10.3.5.18           |  | REL-5   |
| >>USCH TFS                         | MP             |                                      | Transport format set 10.3.5.23                          |  | REL-5   |
| >USCH TFCS                         | OP             |                                      | Transport<br>Format<br>Combinati<br>on Set<br>10.3.5.20 |  |         |

| Condition | Explanation   |
|-----------|---|
| Block17   | This IE is not needed in System Information Block 17. |
|           | Otherwise it is optional.                             |

# 10.3.6.66a PUSCH system information VHCR

NOTE: Only for 7.68 Mcps TDD (REL-7).

| Information<br>Element/Group name  | Need           | Multi                                | Type and reference                                      | Semantics description  | Version |
|------------------------------------|----------------|--------------------------------------|---|--|---------|
| PUSCH information                  | MP             | 1 to<br><maxpu<br>SCH&gt;</maxpu<br> |   |  | REL-7   |
| >PUSCH Identity                    | MP             |                                      | Integer(1 hiPUSCHi dentities)                           |  | REL-7   |
| >PUSCH info VHCR                   | MP             |                                      | PUSCH<br>info<br>VHCR<br>10.3.6.63<br>a                 |  | REL-7   |
| >SFN Time Info                     | CH-<br>Block17 |                                      | SFN Time<br>Info<br>10.3.6.75                           |  | REL-7   |
| >USCH TFS                          | OP             |                                      | Transport format set 10.3.5.23                          |  | REL-7   |
| >USCH Transport<br>Channels        | OP             | 1 to<br><maxtr<br>CH&gt;</maxtr<br>  |   | If PUSCH is configured for 7.68 Mcps TDD in Rel-7 this IE may be included. | REL-7   |
| >> USCH Transport channel identity | MP             |                                      | Transport<br>channel<br>identity<br>10.3.5.18           |  | REL-7   |
| >>USCH TFS                         | MP             |                                      | Transport format set 10.3.5.23                          |  | REL-7   |
| >USCH TFCS                         | OP             |                                      | Transport<br>Format<br>Combinati<br>on Set<br>10.3.5.20 |  | REL-7   |

| Condition | Explanation   |
|-----------|---|
| Block17   | This IE is not needed in System Information Block 17. |
|           | Otherwise it is optional.                             |

## 10.3.6.67 RACH transmission parameters

NOTE: Only for FDD.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description                |
|--------------------------------|------|-------|--------------------|--------------------------------------|
| Mmax                           | MP   |       | Integer(132        | Maximum number of preamble cycles    |
| NB01min                        | MP   |       | Integer(050        | Sets lower bound for random back-off |
| NB01max                        | MP   |       | Integer(050        | Sets upper bound for random back-off |

## 10.3.6.68 Radio link addition information

| Information Element/Group name | Need | Multi | Type and reference                 | Semantics description | Version |
|--------------------------------|------|-------|------------------------------------|-----------------------|---------|
| Primary CPICH info             | MP   |       | Primary<br>CPICH info<br>10.3.6.60 |                       |         |
| Cell ID                        | OP   |       | Cell ID<br>10.3.2.2                |                       | REL-4   |
| CHOICE DPCH info               | MP   |       |                                    |                       | REL-6   |

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| >Downlink DPCH info for each   | MP   |       | Downlink           | decomplient           |         |
| RL                             |      |       | DPCH info          |                       |         |
|                                |      |       | for each RL        |                       |         |
|                                |      |       | 10.3.6.21          |                       |         |
| >Downlink F-DPCH info for each | MP   |       | Downlink F-        |                       | REL-6   |
| RL                             |      |       | F-DPCH info        |                       |         |
|                                |      |       | for each RL        |                       |         |
|                                |      |       | 10.3.6.23ob        |                       |         |
| E-HICH Information             | OP   |       | E-HICH Info        |                       | REL-6   |
|                                |      |       | 10.3.6.101         |                       |         |
| E-RGCH Information             | OP   |       | E-RGCH             |                       | REL-6   |
|                                |      |       | Info               |                       |         |
|                                |      |       | 10.3.6.102         |                       |         |

## 10.3.6.69 Radio link removal information

| Information Element/Group name | Need | Multi | Type and reference    | Semantics description |
|--------------------------------|------|-------|-----------------------|-----------------------|
| Primary CPICH info             | MP   |       | Primary<br>CPICH info |                       |
|                                |      |       | 10.3.6.60             |                       |

## 10.3.6.69a E-DCH reconfiguration information

NOTE: Only for FDD.

| Information Element/Group name | Need | Multi | Type and reference                 | Semantics description   | Version |
|--------------------------------|------|-------|------------------------------------|---|---------|
| E-DCH RL Info new serving cell | OP   |       |                                    |   | REL-6   |
| >Primary CPICH info            | MP   |       | Primary<br>CPICH info<br>10.3.6.60 | Indicates<br>scheduling E-DCH<br>cell from the<br>active set cells. | REL-6   |
| >E-AGCH Info                   | MP   |       | E-AGCH Info<br>10.3.6.100          |   | REL-6   |

| Information Element/Group name                       | Need | Multi                                  | Type and reference                        | Semantics description  | Version        |
|--|------|--|---|--|----------------|
| >Serving Grant                                       | OP   |  |   | •  | REL-6          |
| >>Serving Grant value                                | OP   |  | Integer<br>(037,38)                       | (037) indicates E-DCH serving grant index as defined in [15]; index 38 means zero grant.                   | REL-6          |
| >>Primary/Secondary Grant<br>Selector                | MP   |  | Enumerated<br>("primary",<br>"secondary") | Indicates whether<br>the Serving Grant<br>is received with a<br>Primary E-RNTI or<br>Secondary E-<br>RNTI. | REL-6          |
| >E-DPCCH/DPCCH power offset                          | OP   |  | Integer (08)                              | Refer to quantization of the power offset in [28].   | REL-6          |
| >Reference E-TFCIs                                   | OP   | 1 to 8                                 |   | See [29].  | REL-6          |
| >>Reference E-TFCI                                   | MP   |  | Integer<br>(0127)                         |  | REL-6          |
| >>Reference E-TFCI PO                                | MP   |  | Integer (029,                             | Refer to<br>quantization of the<br>power offset in<br>[28].<br>Values 30 and 31                            | REL-6          |
|  |      |  | 30, 31)                                   | are only used for<br>E-TFCI > ETFCI<br>Boost   | REL-7          |
| >Power Offset for Scheduling Info                    | OP   |  | Integer (06)                              | Only used when<br>no MACd PDU's<br>are included in the<br>same MACe PDU.<br>Unit is in dB.                 | REL-6          |
| >3-Index-Step Threshold                              | OP   |  | Integer<br>(037)                          | Refers to an index<br>in the "SG-Table"<br>(see [15]).<br>NOTE 1   | REL-6          |
| >2-Index-Step Threshold                              | OP   |  | Integer<br>(037)                          | Refers to an index<br>in the "SG-Table"<br>(see [15]).<br>NOTE 1   | REL-6          |
| >E-HICH Information                                  | OP   |  | E-HICH Info<br>10.3.6.101                 | This IE is not present if the serving E-DCH cell is added to the active set with this message.             | REL-6          |
| >CHOICE E-RGCH Information                           | OP   |  |   | This IE is not present if the serving E-DCH cell is added to the active set with this message              | REL-6          |
| >>E-RGCH Information                                 | MP   |  | E-RGCH<br>Info<br>10.3.6.102              |  | REL-6          |
| >>E-RGCH release indicator E-DCH RL Info other cells | OP   | 1 to<br><maxedc<br>HRL&gt;</maxedc<br> |   | (no data) This IE is not allowed to include information on a RL added by this message                      | REL-6<br>REL-6 |
| >Primary CPICH info                                  | MP   |  | Primary<br>CPICH info<br>10.3.6.60        | , , ,  | REL-6          |
| >CHOICE E-HICH Information                           | OP   |  |   |  | REL-6          |

| Information Element/Group   | Need | Multi | Type and    | Semantics   | Version |
|---|------|-------|-------------|-------------|---------|
| name  |      |       | reference   | description |         |
| >>E-HICH Information  | MP   |       | E-HICH Info |             | REL-6   |
|   |      |       | 10.3.6.101  |             |         |
| >>E-HICH release indicator  |      |       |             | (no data)   | REL-6   |
| >CHOICE E-RGCH Information  | OP   |       |             |             | REL-6   |
| >>E-RGCH Information  | MP   |       | E-RGCH      |             | REL-6   |
|   |      |       | Info        |             |         |
|   |      |       | 10.3.6.102  |             |         |
| >>E-RGCH release indicator  |      |       |             | (no data)   | REL-6   |
| NOTE 1: If the 3-index-Step Threshold value is greater than 2-index-Step Threshold, the UE behaviour is |      |       |             |             |         |
| unspecified.  |      |       |             |             |         |

## 10.3.6.69b E-DCH reconfiguration information same serving cell

NOTE: Only for FDD.

| Information Element/Group  | Need | Multi  | Type and          | Semantics  | Version |
|----------------------------|------|--------|-------------------|--|---------|
| E-DPCCH/DPCCH power offset | OP   |        | Integer (08)      | description  This IE is not present if the serving E-DCH cell is changed with this message. Refer to quantization of the power offset in [28]. | REL-7   |
| Reference E-TFCIs          | OP   | 1 to 8 |                   | This IE is not present if the serving E-DCH cell is changed with this message. See [29].   | REL-7   |
| >Reference E-TFCI          | MP   |        | Integer<br>(0127) |  | REL-7   |
| >Reference E-TFCI PO       | MP   |        | Integer<br>(029,  | Refer to quantization of the power offset in [28].   | REL-7   |
|                            |      |        | 30, 31)           | Values 30 and 31 are only used for E-TFCI > ETFCI Boost  | REL-7   |

10.3.6.70 Void

## 10.3.6.70a SCTD indicator

NOTE: Only for TDD

| Information Element/Group name | Need | Multi | Type and reference | Semantics description            |
|--------------------------------|------|-------|--------------------|----------------------------------|
| SCTD indicator                 | MP   |       | Boolean            | TRUE indicates that SCTD is used |

# 10.3.6.71 Secondary CCPCH info

| Information Element/Group name     | Need   | Multi | Type and reference                           | Semantics description   | Version |
|------------------------------------|--------|-------|--|---|---------|
| CHOICE mode                        | MP     |       |  |   |         |
| >FDD                               |        |       |  |   |         |
| >>Secondary scrambling code        | OP     |       | Secondary<br>scrambling<br>code<br>10.3.6.74 | May only be sent for SCCPCH channels not carrying the PCH.  |         |
| >>STTD indicator                   | MP     |       | STTD<br>Indicator<br>10.3.6.78               |   |         |
| >>Spreading factor                 | MP     |       | Integer(4, 8,<br>16, 32, 64,<br>128, 256)    |   |         |
| >>Code number                      | MP     |       | Integer(0Sp<br>reading<br>factor - 1)        |   |         |
| >>Pilot symbol existence           | MP     |       | Boolean                                      | TRUE means the existence.   |         |
| >>TFCI existence                   | MP     |       | Boolean                                      | TRUE indicates that TFCI is used. When spreading factor is less than or equal to 64, FALSE indicates that TFCI is not used and therefore DTX is used in the TFCI field. |         |
| >>Fixed or Flexible Position       | MP     |       | Enumerated<br>(Fixed,<br>Flexible)           |   |         |
| >>Timing Offset                    | MD     |       | Integer(038<br>144 by step<br>of 256)        | Chip Delay of the Secondary CCPCH relative to the Primary CCPCH. Default value is 0.  |         |
| >1.28 Mcps TDD or 3.84 Mcps<br>TDD |        |       |  |   |         |
| >>Offset                           | MP     |       | Integer<br>(0Repetitio<br>n Period -1)       | SFN modulo Repetition period = offset. Repetition period is the one indicated in the accompanyi ng Common timeslot info IE  |         |
| >>Common timeslot info             | MP     |       | Common                                       | 15  |         |
|                                    | 1 1111 |       | ,  | I   |         |

| Information Element/Group name | Need | Multi   | Type and reference                       | Semantics description  | Version |
|--------------------------------|------|---------|--|--|---------|
|                                |      |         | timeslot info<br>10.3.6.10               |  |         |
| >>Individual timeslot info     | MP   |         | Individual<br>timeslot info<br>10.3.6.37 |  |         |
| >>Code List                    | MP   | 1 to 16 |  |  |         |
| >>>Channelisation Code         | MP   |         | Enumerated(<br>(16/1)(16/1<br>6))        |  |         |
| >7.68 Mcps TDD                 |      |         |  |  | REL-7   |
| >>Offset                       | MP   |         | Integer<br>(0Repetitio<br>n Period -1)   | SFN modulo Repetition period = offset. Repetition period is the one indicated in the accompanyi ng Common timeslot info IE | REL-7   |
| >>Common timeslot info         | MP   |         | Common<br>timeslot info<br>10.3.6.10     |  | REL-7   |
| >>Individual timeslot info     | MP   |         | Individual<br>timeslot info<br>10.3.6.37 |  | REL-7   |
| >>Code List                    | MP   | 1 to 32 |  |  | REL-7   |
| >>>Channelisation Code         | MP   |         | Enumerated( (32/1)(32/3 2))              |  | REL-7   |

# 10.3.6.71a Secondary CCPCH info MBMS

| Information Element/Group name         | Need         | Multi | Type and reference                                       | Semantics description  | Version |
|--|--------------|-------|--|--|---------|
| CHOICE mode                            | MP           |       |  |  | REL-6   |
| >FDD                                   |              |       |  |  | REL-6   |
| >>Secondary scrambling code            | OP           |       | Secondary<br>scrambling<br>code<br>10.3.6.74             | May only be sent for SCCPCH channels not carrying the PCH.   | REL-6   |
| >>STTD indicator                       | MP           |       | STTD<br>Indicator<br>10.3.6.78                           |  | REL-6   |
| >>Spreading factor                     | MP           |       | Integer(4, 8,<br>16, 32, 64,<br>128, 256)                |  | REL-6   |
| >>Code number                          | MP           |       | Integer(0Sp<br>reading<br>factor – 1)                    |  | REL-6   |
| >>Timing Offset                        | MD           |       | Integer(038<br>144 by step<br>of 256)                    | Chip Delay of the Secondary CCPCH relative to the Primary CCPCH. Default value is 0.   | REL-6   |
| >>CHOICE Modulation                    | CV-<br>MBSFN |       |  |  | REL-7   |
| >>>QPSK                                | MP           |       |  | (no data)  | REL-7   |
| >>>16QAM                               | MP           |       |  |  | REL-7   |
| >>>>CPICH secondary CCPCH power offset | MP           |       | Integer(-<br>114)  |  | REL-7   |
| >1.28/3.84 Mcps TDD                    |              |       |  |  | REL-6   |
| >> Common timeslot info MBMS           | MP           |       | Common<br>timeslot info<br>MBMS<br>10.3.6.10a            | Interleaving mode,<br>TFCI coding and<br>puncturing limit for<br>Secondary CCPCH<br>info MBMS  | REL-6   |
| >>Downlink Timeslots and Codes         | MP           |       | Downlink<br>timeslots<br>and codes<br>10.3.6.32          | One or more<br>timeslots and codes<br>for S-CCPCH<br>supporting MBMS<br>MTCH   | REL-6   |
| >> MBSFN Special Time Slot             | OP           |       | Time Slot<br>LCR<br>Extension<br>10.3.6.83a              | For 1.28 Mcps TDD MBSFN only mode, this IE indicates the SCCPCH is deployed on the MBSFN Special Time Slot [30]. The IE 'Timeslot number' in 'Downlink Timeslots and Codes' shall be ignored if this IE appears. | REL-7   |
| >>Modulation                           | MP           |       | Enumerated<br>(QPSK,<br>16QAM)                           |  | REL-7   |
| >7.68 Mcps TDD                         |              |       |  |  | REL-7   |
| >>Common timeslot info MBMS            | MP           |       | Common<br>timeslot info<br>MBMS<br>10.3.6.10a            | Interleaving mode, TFCI coding and puncturing limit for Secondary CCPCH info MBMS  | REL-7   |
| >>Downlink Timeslots and Codes VHCR    | MP           |       | Downlink<br>timeslots<br>and codes<br>VHCR<br>10.3.6.32a | One or more<br>timeslots and codes<br>for S-CCPCH<br>supporting MBMS<br>MTCH   | REL-7   |

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| >>Modulation                   | MP   |       | Enumerated         |                       | REL-7   |
|                                |      |       | (QPSK,             |                       |         |
|                                |      |       | 16QAM)             |                       |         |

| Condition | Explanation  |  |  |
|-----------|--|--|--|
|           | This IE is mandatory present when the cell on which this IE is sent is operating in MBSFN mode according to subclause 8.1.1.6.3. Otherwise the IE is not needed. |  |  |

NOTE: For FDD, the S-CCPCH signalled in this IE is always configured with flexible position, TFCI is always present and pilot is always absent.

## 10.3.6.71b Secondary CCPCH info MBMS Diff

| Information Element/Group name | Need | Multi | Type and reference                           | Semantics description  | Version |
|--------------------------------|------|-------|--|--|---------|
| Secondary scrambling code      | OP   |       | Secondary<br>scrambling<br>code<br>10.3.6.74 | May only be sent for SCCPCH channels not carrying the PCH.       | REL-7   |
| STTD indicator                 | MP   |       | STTD<br>Indicator<br>10.3.6.78               |  | REL-7   |
| Spreading factor               | OP   |       | Integer(4, 8,<br>16, 32, 64,<br>128, 256)    |  | REL-7   |
| Code number                    | OP   |       | Integer(0Sp<br>reading<br>factor – 1)        |  | REL-7   |
| Timing Offset                  | OP   |       | Integer(038<br>144 by step<br>of 256)        | Chip Delay of the Secondary CCPCH relative to the Primary CCPCH. | REL-7   |

NOTE: For FDD, the S-CCPCH signalled in this IE is always configured with flexible position, TFCI is always present and pilot is always absent.

## 10.3.6.72 Secondary CCPCH system information

| Information element                     | Need             | Multi                                   | Type and reference                                  | Semantics description  | Version |
|---|------------------|---|---|--|---------|
| Secondary CCPCH system information list | MP               | 1 to<br><maxscc<br>PCH&gt;</maxscc<br>  |   |  |         |
| >Secondary CCPCH info                   | MP               |   | Secondary<br>CCPCH info<br>10.3.6.71                | Note 1   |         |
| >TFCS                                   | MD               |   | Transport<br>format<br>combination<br>set 10.3.5.20 | For FACHs and PCH Default value is the value of "TFCS" for the previous SCCPCH in the list. NOTE: The first occurrence is then MP. |         |
| >FACH/PCH information list              | MD               | 1 to<br><maxfac<br>HPCH&gt;</maxfac<br> |   | Default value is the value of "FACH/PCH" for the previous SCCPCH in the list. NOTE: The first occurrence is then MP.               |         |
| >>TFS                                   | MP               |   | Transport format set 10.3.5.23                      | For each FACH and PCH<br>Note 2  |         |
| >>Transport channel identity            | MP               |   | Transport<br>channel<br>identity<br>10.3.5.18       |  |         |
| >>CTCH indicator                        | MP               |   | Boolean   | The value TRUE indicates that a CTCH is mapped on the FACH, and FALSE that no CTCH is mapped.                                      |         |
| >PICH info                              | OP               |   | PICH info<br>10.3.6.49                              | PICH info is present only when PCH is multiplexed on Secondary CCPCH   |         |
| MCCH configuration information          | CV-SIB<br>type 5 |   | MCCH<br>configuration<br>information<br>10.3.9a.13  | Included if MCCH is on an S-<br>CCPCH used also for Non-<br>MBMS<br>Note 3   | REL-6   |

NOTE 1: The secondary CCPCHs carrying a PCH shall be listed first.

NOTE 2: TFS for PCH shall be the first "FACH/PCH information" in the list if a PCH exists for the respective secondary CCPCH.

NOTE 3: If the IE "MCCH configuration information is included", it applies to the last S-CCPCH in the IE "Secondary CCPCH system information list" and to the last FACH included in the IE "FACH/PCH information list".

| Condition  | Explanation   |
|------------|---|
| SIB type 5 | The IE is optional if the IE " Secondary CCPCH system information" is included in the SIB type 5 or |
|            | 5bis, otherwise the IE is not needed in the message   |

## 10.3.6.72a Secondary CCPCH system information MBMS

| Information element                | Need | Multi                                   | Type and reference                                  | Semantics description                                    | Version |
|------------------------------------|------|---|---|--|---------|
| Secondary CCPCH system information | MP   |   |   | An S-CCPCH carrying MCCH and possibly also MTCH and MSCH | REL-6   |
| >Secondary CCPCH info<br>MBMS      | MP   |   | Secondary<br>CCPCH info<br>MBMS<br>10.3.6.71a       |  | REL-6   |
| >TFCS                              | MP   |   | Transport<br>format<br>combination<br>set 10.3.5.20 |  | REL-6   |
| >FACH carrying MCCH                | MP   |   |   |  | REL-6   |
| >>TFS                              | MP   |   | Transport format set 10.3.5.23                      |  | REL-6   |
| >>MCCH configuration information   | MP   |   | MCCH<br>configuration<br>information<br>10.3.9a.13  |  | REL-6   |
| >FACH carrying MTCH list           | OP   | 1 to<br><maxfac<br>HPCH&gt;</maxfac<br> |   |  | REL-6   |
| >>TFS                              | MP   |   | Transport format set 10.3.5.23                      |  | REL-6   |
| >Scheduling information            | OP   |   |   |  | REL-6   |
| >>FACH carrying MSCH               | MP   |   | Transport format set 10.3.5.23                      | Transport channel carrying MSCH                          | REL-6   |

## 10.3.6.73 Secondary CPICH info

NOTE: Only for FDD.

| Information Element/Group name | Need | Multi | Type and reference                           | Semantics description  |
|--------------------------------|------|-------|--|--|
| Secondary scrambling code      | MD   |       | Secondary<br>scrambling<br>code<br>10.3.6.74 | Default is the same scrambling code as for the Primary CPICH |
| Channelisation code            | MP   |       | Integer(025<br>5)                            | SF=256   |

## 10.3.6.74 Secondary scrambling code

| Information Element/Group | Need | Multi | Type and    | Semantics description |
|---------------------------|------|-------|-------------|-----------------------|
| name                      |      |       | reference   |                       |
| Secondary scrambling code | MP   |       | Integer(115 |                       |

## 10.3.6.74a Serving HS-DSCH cell information

| Information<br>Element/Group name | Need | Multi | Type and reference                                | Semantics description   | Version |
|-----------------------------------|------|-------|---|---|---------|
| ΔΑCΚ                              | OP   |       | Integer(08)                                       | Refer to quantization of the power offset in [28]                           | REL-6   |
| $\Delta_{NACK}$                   | OP   |       | Integer(08)                                       | Refer to quantization of the power offset in [28]                           | REL-6   |
| HARQ_preamble_mode                | MP   |       | Integer(0, 1)                                     | 1 indicates that preamble and postamble are used on the HS-DPCCH – see [29] | REL-6   |
| Primary CPICH info                | OP   |       | Primary<br>CPICH info<br>10.3.6.60                | Indicate the new HS-DSCH serving cell                                       | REL-6   |
| Downlink HS-PDSCH<br>Information  | OP   |       | Downlink<br>HS_PDSCH<br>Information<br>10.3.6.23a |   | REL-6   |
| HARQ Info                         | OP   |       | HARQ info<br>10.3.5.7a                            |   | REL-6   |
| MAC-hs reset indicator            | OP   |       | Enumerated (true)                                 | TRUE Indicates the MAC-hs/ehs entity needs to be reset.                     | REL-6   |

#### 10.3.6.75 SFN Time info

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| Activation time SFN            | MP   |       | Integer<br>(04095) | System frame number start of the physical channel existence. |
| Duration                       | MP   |       | Integer(140<br>96) | Total number of frames the physical channel will exist.      |

#### 10.3.6.75a Special Burst Scheduling

NOTE: Only for TDD.

| Information Element/Group name  | Need | Multi | Type and reference | Semantics description   |
|---------------------------------|------|-------|--------------------|---|
| Special Burst Generation Period | MP   |       | Integer (07)       | Value represents number of radio frames 0 = 2 frames, 1 = 4 frames, 2 = 8 frames, 3 = 16 frames, 4 = 32 frames, 5 = 64 frames, 6 = 128 frames, 7 = 256 frames |

10.3.6.76 Void

10.3.6.77 Void

10.3.6.78 STTD indicator

NOTE: Only for FDD

Indicates whether STTD is used or not.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description        |
|--------------------------------|------|-------|--------------------|------------------------------|
| STTD Indicator                 | MP   |       | Boolean            | TRUE means that STTD is used |

## 10.3.6.780 SYNC\_UL codes bitmap

NOTE: Only for 1.28 Mcps TDD.

| Need | Multi | Type and     | Semantics   | Version   |
|------|-------|--------------|---|---|
|      |       | reference    | description   |   |
| MP   |       | Bitstring(8) | Each bit indicates availability of a SYNC_UL code, where the SYNC_UL codes are numbered "code 0" to "code 7".  The value 1 of a bit indicates that the corresponding SYNC_UL code can be used.  The value 0 of a bit indicates that the corresponding SYNC_UL code can be used. | REL-7   |
|      |       |              | reference   | mP  Bitstring(8)  Each bit indicates availability of a SYNC_UL code, where the SYNC_UL codes are numbered "code 0" to "code 7".  The value 1 of a bit indicates that the corresponding SYNC_UL code can be used.  The value 0 of a bit indicates that the corresponding |

## 10.3.6.78a SYNC\_UL info

NOTE: Only for 1.28 Mcps TDD.

| Information Element/ Group name | Need | Multi | Type and reference                       | Semantics description   | Version |
|---------------------------------|------|-------|--|---|---------|
| SYNC_UL codes bitmap            | MP   |       | SYNC_UL<br>codes<br>bitmap<br>10.3.6.780 |   | REL-4   |
| PRX <sub>UpPCHdes</sub>         | MP   |       | Integer(-<br>12058 by<br>step of 1)      | In dBm  | REL-4   |
| Power Ramp Step                 | MP   |       | Integer(0,1,2<br>,3)                     | In dB   | REL-4   |
| Max SYNC_UL Transmissions       | MP   |       | Integer(1,2,4<br>,8)                     | Maximum numbers of SYNC_UL transmissions in a power ramping sequence. | REL-4   |
| Mmax                            | MP   |       | Integer(132                              | Maximum number of synchronisation attempts.                           | REL-4   |
| E-RUCCH SYNC_UL codes bitmap    | MP   |       | SYNC_UL<br>codes<br>bitmap<br>10.3.6.780 |   | REL-7   |

#### 10.3.6.78b TDD MBSFN Information

NOTE: Only for TDD

This information indicates which timeslots are assigned to TDD MBSFN and the scrambling codes assigned to each timeslot.

| Information Element/Group name | Need | Multi             | Type and reference                | Semantics description | Version |
|--------------------------------|------|-------------------|-----------------------------------|-----------------------|---------|
| Time slot list                 | MP   | 1 <maxts></maxts> |                                   |                       | REL-7   |
| >Timeslot Number               | MP   |                   | Timeslot<br>Number<br>10.3.6.84   |                       | REL-7   |
| >Cell parameters ID            | MP   |                   | Cell<br>parameters<br>Id 10.3.6.9 |                       | REL-7   |

## 10.3.6.78c LCR TDD MBSFN Information

NOTE: Only for 1.28Mcps TDD

This information indicates which timeslots of the secondary frequency of a multi-frequency cell are assigned to 1.28Mcps TDD MBSFN and the scrambling codes related to each timeslot.

| Information Element/Group name | Need | Multi  | Type and reference                                       | Semantics description   | Version |
|--------------------------------|------|--|--|---|---------|
| Time slot info list            | MP   | 1 to<br><maxmbs<br>FNclusters<br/>&gt;</maxmbs<br> |  |   | REL-7   |
| >Frequency index               | MP   |  | Integer<br>(1 <maxmb<br>SFNclusters<br/>&gt;)</maxmb<br> | For 1.28 Mcps<br>TDD index<br>pointing to a<br>frequency<br>indicated in the<br>SIB 11. | REL-7   |
| >Time slot list                | MP   | 1 to <maxts></maxts>                               |  |   | REL-7   |
| >>Timeslot Number              | MP   |  | Timeslot<br>Number<br>10.3.6.84                          |   | REL-7   |
| >>Cell parameters ID           | MP   |  | Cell<br>parameters<br>Id 10.3.6.9                        |   | REL-7   |

## 10.3.6.78d SYNC\_UL info for E-RUCCH

NOTE: Only for 1.28 Mcps TDD.

| Information Element/Group name | Need                                     | Multi | Type and reference                       | Semantics description   | Version |
|--------------------------------|--|-------|--|---|---------|
| PRXUpPCHdes                    | CV-<br>Synchronis<br>ation<br>parameters |       | Integer(-<br>12058 by<br>step of 1)      | In dBm  | Rel-7   |
| Power Ramp Step                | CV-<br>Synchronis<br>ation<br>parameters |       | Integer(0,1,2<br>,3)                     | In dB   | Rel-7   |
| Max SYNC_UL Transmissions      | CV-<br>Synchronis<br>ation<br>parameters |       | Integer(1,2,4<br>,8)                     | Maximum numbers of SYNC_UL transmissions in a power ramping sequence. | Rel-7   |
| Mmax                           | MP                                       |       | Integer(132                              | Maximum number of synchronisation attempts.                           | Rel-7   |
| E-RUCCH SYNC_UL codes bitmap   | MP                                       |       | SYNC_UL<br>codes<br>bitmap<br>10.3.6.780 |   | Rel-7   |

| Condition                  | Explanation   |
|----------------------------|---|
| Synchronisation parameters | This IE is mandatory present if the IE "Synchronisation parameters" does not exist, Otherwise it is not needed. |

## 10.3.6.79 TDD open loop power control

This information element contains parameters for open loop power control setting for TDD.

| Information Element/Group name      | Need     | Multi | Type and reference                  | Semantics description                    | Version |
|-------------------------------------|----------|-------|-------------------------------------|--|---------|
| Primary CCPCH Tx Power              | MP       |       | Primary<br>CCPCH Tx<br>Power        | For path loss calculation                |         |
| CHOICE TDD option                   | MP       |       | 10.3.6.59                           |  | REL-4   |
| >3.84 Mcps TDD                      | IVII     |       |                                     |  | REL-4   |
| >>Alpha                             | OP       |       | Alpha<br>10.3.6.5                   |  |         |
| >>PRACH Constant Value              | MP       |       | Constant<br>Value TDD<br>10.3.6.11a | Operator<br>controlled PRACH<br>Margin   |         |
| >>DPCH Constant Value               | MP       |       | Constant<br>Value TDD<br>10.3.6.11a | Operator<br>controlled UL<br>DPCH Margin |         |
| >>PUSCH Constant Value              | OP       |       | Constant<br>Value TDD<br>10.3.6.11a | Operator<br>controlled PUSCH<br>Margin   |         |
| >>UE positioning related parameters | CV-IPDLs |       |                                     |  | REL-4   |
| >>>IPDL-Alpha                       | MP       |       | Alpha<br>10.3.6.5                   |  | REL-4   |
| >>>Max power increase               | MP       |       | Integer (03)                        | In db                                    | REL-4   |
| >7.68 Mcps TDD                      |          |       |                                     |  | REL-7   |
| >>Alpha                             | OP       |       | Alpha<br>10.3.6.5                   |  | REL-7   |
| >>PRACH Constant Value              | MP       |       | Constant<br>Value TDD<br>10.3.6.11a | Operator<br>controlled PRACH<br>Margin   | REL-7   |
| >>DPCH Constant Value               | MP       |       | Constant<br>Value TDD               | Operator controlled UL                   | REL-7   |

| Information Element/Group | Need     | Multi | Type and     | Semantics        | Version |
|---------------------------|----------|-------|--------------|------------------|---------|
| name                      |          |       | reference    | description      |         |
|                           |          |       | 10.3.6.11a   | DPCH Margin      |         |
| >>PUSCH Constant Value    | OP       |       | Constant     | Operator         | REL-7   |
|                           |          |       | Value TDD    | controlled PUSCH |         |
|                           |          |       | 10.3.6.11a   | Margin           |         |
| >>UE positioning related  | CV-IPDLs |       |              |                  | REL-7   |
| parameters                |          |       |              |                  |         |
| >>>IPDL-Alpha             | MP       |       | Alpha        |                  |         |
|                           |          |       | 10.3.6.5     |                  |         |
| >>>Max power increase     | MP       |       | Integer (03) | In db            | REL-7   |
|                           |          |       |              |                  |         |
| >1.28 Mcps TDD            |          |       |              | (no data)        | REL-4   |

| Condition | Explanation   |
|-----------|---|
| IPDLs     | This IE is present only if idle periods are applied |

## 10.3.6.80 TFC Control duration

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description   |
|--------------------------------|------|-------|--|---|
| TFC Control duration           | MP   |       | Integer (1, 2,<br>4, 8, 16, 24,<br>32, 48, 64,<br>128, 192,<br>256, 512) | Defines the period in multiples of 10 ms frames for which the defined TFC sub-set is to be applied. |

#### 10.3.6.81 Void

## 10.3.6.82 TGPSI

| Information Element/Group name | Need | Multi | Type and reference    | Semantics description   |
|--------------------------------|------|-------|-----------------------|---|
| TGPSI                          | MP   |       | Integer(1M<br>axTGPS) | Transmission Gap Pattern Sequence Identifier Establish a reference to the compressed mode pattern sequence. Up to <maxtgps> simultaneous compressed mode pattern sequences can be used.</maxtgps> |

## 10.3.6.83 Time info

| Information Element/Group | Need | Multi | Type and                     | Semantics description  |
|---------------------------|------|-------|------------------------------|--|
| name                      |      |       | reference                    |  |
| Activation time           | MD   |       | Activation time 10.3.3.1     | Frame number start of the physical channel existence. Default value is "Now"         |
| Duration                  | MD   |       | Integer(140<br>96, infinite) | Total number of frames the physical channel will exist. Default value is "infinite". |

#### 10.3.6.83a Time Slot LCR Extension

| IE/Group Name           | Presence | Range | IE Type and | Semantics Description          |
|-------------------------|----------|-------|-------------|--------------------------------|
|                         |          |       | Reference   |                                |
| Time Slot LCR Extension |          |       | ENUMERAT    | TS7 indicates the MBSFN        |
|                         |          |       | ED (TS7,)   | Special Timeslot for 1.28 Mcps |
|                         |          |       |             | TDD MBSFN Dedicated            |
|                         |          |       |             | Carrier. Three spare values    |
|                         |          |       |             | are reserved.                  |

#### 10.3.6.84 Timeslot number

| Information Element/Group name | Need | Multi | Type and reference | Semantics description      | Version |
|--------------------------------|------|-------|--------------------|----------------------------|---------|
| CHOICE TDD option              | MP   |       |                    | <b>1</b>                   | REL-4   |
| >3.84 Mcps TDD                 |      |       |                    |                            | REL-4   |
| >>Timeslot number              | MP   |       | Integer(014        | Timeslot within a frame    |         |
| >7.68 Mcps TDD                 |      |       |                    |                            | REL-7   |
| >>Timeslot number              | MP   |       | Integer(014        | Timeslot within a frame    | REL-7   |
| >1.28 Mcps TDD                 |      |       |                    |                            | REL-4   |
| >>Timeslot number              | MP   |       | Integer(06)        | Timeslot within a subframe | REL-4   |

#### 10.3.6.85 TPC combination index

NOTE: Only for FDD.

| Information<br>Element/Group name | Need | Multi | Type and reference | Semantics description  | Version |
|-----------------------------------|------|-------|--------------------|--|---------|
| TPC combination index             | MP   |       | Integer(05)        | Radio links with the same index have TPC bits, which for the UE are known to be the same.  Radio links that are part of the E-DCH active set and with the same | REL-6   |
|                                   |      |       |                    | index have acknowledgement feedback signals on the E-HICH which for the UE are known to be the same.   |         |

#### 10.3.6.85a TSTD indicator

NOTE: Only for 1.28 Mcps TDD.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| TSTD indicator                 | MD   |       | Boolean            | Default value is TRUE | REL-4   |

## 10.3.6.86 TX Diversity Mode

NOTE: Only for FDD.

| Information Element/Group | Need | Multi | Type and    | Semantics description |
|---------------------------|------|-------|-------------|-----------------------|
| name                      |      |       | reference   |                       |
| Tx diversity Mode         | MP   |       | Enumerated  |                       |
|                           |      |       | (none,      |                       |
|                           |      |       | STTD,       |                       |
|                           |      |       | closed loop |                       |
|                           |      |       | mode1)      |                       |

# 10.3.6.860 UL 16QAM configuration

NOTE: Only for FDD.

| Information Element/Group   | Need  | Multi           | Type and        | Semantics                          | Version    |  |
|---|---|-----------------|-----------------|------------------------------------|------------|--|
| name  |   |                 | reference       | description                        |            |  |
| UL 16QAM settings   | CV-   |                 | UL 16QAM        | Presence of this                   | REL-7      |  |
|   | 2msTTI  |                 | settings        | IE indicates that                  |            |  |
|   |   |                 | 10.3.6.86a      | the UE should                      |            |  |
|   |   |                 |                 | operate in 16QAM                   |            |  |
|   |   |                 |                 | mode; absence                      |            |  |
|   |   |                 |                 | indicates that the                 |            |  |
|   |   |                 |                 | UE is not to                       |            |  |
|   |   |                 |                 | operate in 16QAM                   |            |  |
|   |   |                 |                 | mode. See Note                     |            |  |
| NAAO/   | OD  |                 | Farmana and and | 2.                                 | DEL 7      |  |
| MAC-es/e reset indicator  | OP  |                 | Enumerated      | TRUE Indicates                     | REL-7      |  |
|   |   |                 | (true)          | the MAC-es/e<br>entity needs to be |            |  |
|   |   |                 |                 | reset.                             |            |  |
| E-TFCI table index  | OP  |                 | Integer (01)    | Indicates which                    | REL-7      |  |
| L-TFCI table index  | OF  |                 | integer (01)    | standardised E-                    | NEL-1      |  |
|   |   |                 |                 | TFCI TB size                       |            |  |
|   |   |                 |                 | table shall be                     |            |  |
|   |   |                 |                 | used. See Note 1.                  |            |  |
| NOTE 1: If the UE is operating in   | 16QAM mode  | e, the value of | E-TFCI table in |                                    | 2. and     |  |
|   | NOTE 1: If the UE is operating in 16QAM mode, the value of "E-TFCI table index" is increased by 2, and indices in the SG-Table refer to Scheduling Grant Table 2 in [15]. |                 |                 |                                    |            |  |
|   |   |                 |                 | the Mapping of Absol               | lute Grant |  |
| NOTE 2: If this IE is not present, the indices signaled on the E-AGCH refer to the Mapping of Absolute Grant Value Table 16B in [27]. |   |                 |                 |                                    |            |  |

 Condition
 Explanation

 2msTTI
 This IE is present only if 2ms TTI is configured, otherwise it is not needed.

## 10.3.6.86a UL 16QAM settings

| Information Element/Group name     | Need | Multi | Type and reference | Semantics description   | Version |
|------------------------------------|------|-------|--------------------|---|---------|
| BetaEd gain E-AGCH table selection | MP   |       | Integer (01)       | The value 0 indicates that the indices signaled on the E-AGCH refer to the Mapping of Absolute Grant Value Table 16B in [27], and the value 1 indicates Mapping using Absolute Grant Value Table 16B.1 in [27]. | REL-7   |

#### 10.3.6.87 UL interference

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description |
|--------------------------------|------|-------|----------------------|-----------------------|
| UL interference                | MP   |       | Integer (-<br>11070) | In dBm                |

NOTE: In TDD, this IE is a timeslot specific value.

#### 10.3.6.87a UL interference TDD

NOTE: Only for TDD.

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description |
|--------------------------------|------|-------|----------------------|-----------------------|
| TDD UL interference            | MP   |       | Integer (-<br>11052) | In dBm                |

NOTE: This IE is a timeslot specific value.

# 10.3.6.88 Uplink DPCH info

| Information<br>Element/Group name | Need           | Multi  | Type and reference | Semantics description         | Version |
|-----------------------------------|----------------|--|--------------------|-------------------------------|---------|
| Uplink DPCH power                 | OP             |  | Uplink             |                               |         |
| control info                      |                |  | DPCH               |                               |         |
|                                   |                |  | power              |                               |         |
|                                   |                |  | control            |                               |         |
|                                   |                |  | info               |                               |         |
| 0110105                           | 1.15           |  | 10.3.6.91          |                               |         |
| CHOICE mode<br>>FDD               | MP             |  |                    |                               |         |
| >>Scrambling code type            | MP             |  | Enumerat           |                               |         |
| <b>G</b> 7.                       |                |  | ed(short,          |                               |         |
|                                   |                |  | long)              |                               |         |
| >>Scrambling code                 | MP             |  | Integer(0          |                               |         |
| number                            |                |  | 16777215           |                               |         |
|                                   | ļ              |  | )                  |                               |         |
| >>Number of DPDCH                 | MD             |  | Integer(1          | Default value is 1.           |         |
|                                   |                |  | maxDPD             | Number of DPDCH is 1          |         |
|                                   |                |  | CH-UL,             | in HANDOVER TO UTRAN COMMAND. |         |
|                                   |                |  |                    |                               |         |
|                                   |                |  | 0)                 | Value 0 may only be           | REL-6   |
|                                   |                |  |                    | used if target                |         |
|                                   |                |  |                    | configuration has no          |         |
|                                   |                |  |                    | uplink DPDCH.                 |         |
| >>Spreading factor                | CV-            |  | Integer(4,         | Minimum allowed SF of         |         |
|                                   | DPDCH          |  | 8, 16, 32,         | the channelisation code       |         |
|                                   | present        |  | 64, 128,           | for data part                 |         |
| >>TFCI existence                  | MP             |  | 256)<br>Boolean    | TRUE means                    |         |
| >> I FOI existence                | IVIP           |  | boolean            | existence.                    |         |
| >>Number of FBI bits              | OP             |  | Integer (1,        | In bits.                      |         |
|                                   |                |  | 2)                 |                               |         |
| >>Number of TPC bits              | CV-            |  | Integer            | In bits                       | REL-7   |
|                                   | Neither        |  | (4)                |                               |         |
|                                   | TFCI nor       |  |                    |                               |         |
|                                   | FBI<br>present |  |                    |                               |         |
| >>Puncturing Limit                | CV-            |  | Real(0.40          |                               |         |
| >>1 dilotaling Limit              | DPDCH          |  | 1 by               |                               |         |
|                                   | present        |  | step of            |                               |         |
|                                   |                |  | 0.04)              |                               |         |
| >TDD                              |                |  |                    |                               |         |
| >>Uplink Timing                   | OP             |  | Uplink             |                               |         |
| Advance Control                   |                |  | Timing<br>Advance  |                               |         |
|                                   |                |  | Control            |                               |         |
|                                   |                |  | 10.3.6.96          |                               |         |
| >>UL CCTrCH List                  | OP             | 1 to   | 10.0.0.00          | UL physical channels to       |         |
| 02 00 11011 2101                  | •              | <maxcc< td=""><td></td><td>establish or reconfigure</td><td></td></maxcc<> |                    | establish or reconfigure      |         |
|                                   |                | TrCH>  |                    | list.                         |         |
| >>>TFCS ID                        | MD             |  | Integer(1          | Default value is 1.           |         |
|                                   |                |  | 8)                 | =                             |         |
| >>>UL target SIR                  | MP             |  | Real (-11          | In dB                         | DE: 1   |
|                                   |                |  | 20 by              | For 1.28 Mcps TDD this        | REL-4   |
|                                   |                |  | step of            | parameter represents          |         |
|                                   |                |  | 0.5dB)             | PRX <sub>DPCHdes</sub> with   |         |
|                                   |                |  |                    | range Integer(-120            |         |
| >>>Time info                      | MP             |  | Time info          | 58 by step of 1) dBm          |         |
| /// I IIII IIIIU                  | IVII-          |  | 10.3.6.83          |                               |         |
| >>>Common timeslot                | MD             |  | Common             | Default is the current        |         |
| info                              |                |  | timeslot           | Common timeslot info          |         |
|                                   |                |  | info               |                               |         |
|                                   | I              | 1  | 10.3.6.10          | İ                             | Ī       |

| Information                              | Need | Multi                              | Type and  | Semantics description                          | Version |
|--|------|------------------------------------|---|--|---------|
| Element/Group name                       |      |                                    | reference   |  |         |
| >>> CHOICE TDD option                    |      |                                    |   |  | REL-7   |
| >>>> 3.84 Mcps TDD                       |      |                                    |   |  | REL-7   |
| >>>>Uplink DPCH timeslots and codes      | MD   |                                    | Uplink<br>Timeslots<br>and<br>Codes<br>10.3.6.94              | Default is to use the old timeslots and codes. |         |
| >>>7.68 Mcps TDD                         |      |                                    |   |  | REL-7   |
| >>>>Uplink DPCH timeslots and codes VHCR | MD   |                                    | Uplink<br>Timeslots<br>and<br>Codes<br>VHCR<br>10.3.6.94<br>b | Default is to use the old timeslots and codes  | REL-7   |
| >>>> 1.28 Mcps TDD                       |      |                                    |   |  | REL-7   |
| >>>>Uplink DPCH timeslots and codes LCR  | MD   |                                    | Uplink Timeslots and Codes LCR 10.3.6.94 a                    | Default is to use the old timeslots and codes. | REL-7   |
| >>UL CCTrCH List to<br>Remove            | OP   | 1 <max<br>CCTrCH<br/>&gt;</max<br> |   | UL physical channels to remove list            |         |
| >>>TFCS ID                               | MP   |                                    | Integer(1<br>8)   |  |         |

| Condition                    | Explanation   |
|------------------------------|---|
| DPDCHpresent                 | This IE is mandatory if the target configuration      |
|                              | includes a DPDCH, otherwise it is not needed.         |
| Neither TFCI nor FBI present | This IE is optional if the IE "TFCI existence" is set |
|                              | to FALSE and the IE "Number of FBI bits" is not       |
|                              | present, otherwise it is not needed.                  |

## 10.3.6.89 Uplink DPCH info Post

| Information Element/Group      | Need | Multi | Type and      | Semantics description           | Version |
|--------------------------------|------|-------|---------------|---------------------------------|---------|
| name                           |      |       | reference     |                                 |         |
| Uplink DPCH power control info | MP   |       | Uplink        |                                 |         |
|                                |      |       | DPCH power    |                                 |         |
|                                |      |       | control info  |                                 |         |
|                                |      |       | Post          |                                 |         |
|                                |      |       | 10.3.6.92     |                                 |         |
| CHOICE mode                    | MP   |       |               |                                 |         |
| >FDD                           |      |       |               |                                 |         |
| >>Scrambling code type         | MP   |       | Enumerated(   |                                 |         |
|                                |      |       | short, long)  |                                 |         |
| >>Reduced scrambling code      | MP   |       | Integer(081   | Sub-range of values for initial |         |
| number                         |      |       | 91) ``        | use upon handover to UTRAN.     |         |
| >>Spreading factor             | MP   |       | Integer(4, 8, | SF of the channelisation code   |         |
| 1 3                            |      |       | 16, 32, 64,   | for data part                   |         |
|                                |      |       | 128, 256)     | There is only one DPDCH for     |         |
|                                |      |       | ,,            | this case                       |         |
| >1.28 Mcps TDD and 3.84 Mcps   |      |       |               |                                 |         |
| TDD                            |      |       |               |                                 |         |
| >>Uplink Timing Advance        | OP   |       | Uplink        |                                 |         |
| Control                        |      |       | Timing        |                                 |         |
| <b>C</b> 5 5.                  |      |       | Advance       |                                 |         |
|                                |      |       | Control       |                                 |         |
|                                |      |       | 10.3.6.96     |                                 |         |
| >>Uplink DPCH timeslots and    | MP   |       | Uplink        |                                 |         |
| codes                          | '*'' |       | Timeslots     |                                 |         |
| 00000                          |      |       | and Codes     |                                 |         |
|                                |      |       | 10.3.6.94     |                                 |         |
| >7.68 Mcps TDD                 |      | 1     | 10.0.0.0      |                                 | REL-7   |
| >>Uplink Timing Advance        | OP   |       | Uplink        |                                 | REL-7   |
| Control                        |      |       | Timing        |                                 | '\'     |
|                                |      |       | Advance       |                                 |         |
|                                |      |       | Control       |                                 |         |
|                                |      |       | 10.3.6.96     |                                 |         |
| >>Uplink DPCH timeslots and    | MP   |       | Uplink        |                                 | REL-7   |
| codes                          | IVII |       | Timeslots     |                                 | INCL-1  |
| COUCS                          |      |       | and Codes     |                                 |         |
|                                |      | 1     | VHCR          |                                 |         |
|                                |      | 1     | _             |                                 |         |
|                                |      |       | 10.3.6.94b    |                                 |         |

## 10.3.6.90 Uplink DPCH info Pre

| Information Element/Group name  | Need            | Multi          | Type and reference                           | Semantics description  | Version |
|---------------------------------|-----------------|----------------|--|--|---------|
| Uplink DPCH power control info  | OP              |                | Uplink DPCH power control info Pre 10.3.6.93 |  |         |
| CHOICE mode                     | MP              |                |  |  |         |
| >FDD                            |                 |                |  |  |         |
| >>TFCI existence                | MP              |                | Boolean                                      | TRUE means<br>existence. Default<br>value is TRUE<br>See NOTE 1. |         |
| >>Number of TPC bits            | CV-No<br>TFCI   |                | Integer (4)                                  | In bits  | REL-7   |
| >>Puncturing Limit              | MP              |                | Real(0.401 by step of 0.04)                  |  |         |
| >TDD                            |                 |                |  |  |         |
| >>Common timeslot info          | MP              |                | Common<br>Timeslot Info<br>10.3.6.10         |  |         |
| NOTE 1: Number of FBI bits is n | ot signalled bu | t 0 is implied | as transmit divers                           | sity cannot be setup h   | ere.    |

| Condition | Explanation  |
|-----------|--|
| Single    | This IE is mandatory present if the IE "Number of        |
|           | DPDCH" is "1" and not needed otherwise.                  |
| No TFCI   | This IE is optional if the IE "TFCI existence" is set to |
|           | FALSE, otherwise it is not needed.                       |

#### 10.3.6.91 Uplink DPCH power control info

Parameters used by UE to set DPCH initial output power and to use for closed-loop power control in FDD and 1.28 Mcps TDD and parameters for uplink open loop power control in 3.84 Mcps TDD and 7.68 Mcps TDD.

| Information Element/Group name | Need    | Multi | Type and reference                          | Semantics description  | Version |
|--------------------------------|---------|-------|---|--|---------|
| CHOICE mode                    | MP      |       |   |  |         |
| >FDD                           |         |       |   |  |         |
| >>DPCCH Power offset           | MP      |       | Integer(-<br>164,6 by<br>step of 2)         | In dB  |         |
| >>PC Preamble                  | MP      |       | Integer (07)                                | In number of frames  |         |
| >>SRB delay                    | MP      |       | Integer(07)                                 | In number of frames  |         |
| >>Power Control Algorithm      | MP      |       | Enumerated<br>(algorithm 1,<br>algorithm 2) | Specifies algorithm to be used by UE to interpret TPC commands |         |
| >>TPC step size                | CV-algo |       | Integer (1, 2)                              | In dB  |         |
| >>∆ <sub>ACK</sub>             | OP      |       | Integer<br>(08)                             | Refer to<br>quantization of the<br>power offset in<br>[28]     | REL-5   |
| >>∆NACK                        | OP      |       | Integer<br>(08)                             | refer to<br>quantization of the<br>power offset in             | REL-5   |

| Information Element/Group name                    | Need           | Multi                | Type and reference                                  | Semantics description  | Version        |
|---|----------------|----------------------|---|--|----------------|
|   |                |                      |   | [28]   |                |
| >>Ack-Nack repetition factor >>HARQ_preamble_mode | OP<br>MP       |                      | Integer (14) Integer (0, 1)                         | 1 indicates that<br>preamble and<br>postamble are<br>used on the HS-<br>DPCCH – see [29]   | REL-5<br>REL-6 |
| >TDD  |                |                      |   |  |                |
| >>>>UL target SIR                                 | OP             |                      | Real (-11<br>20 by step of<br>0.5dB)                | In dB For 1.28 Mcps TDD this parameter represents PRXDPCHdes with range Integer(- 12058 by step of 1) dBm  | REL-4          |
| >>CHOICE UL OL PC info                            | MP             |                      |   | N. I.  |                |
| >>>Broadcast UL OL PC info                        | OD             |                      | Null  | No data  |                |
| >>>Individually Signalled                         | OP             |                      |   |  | DEL 4          |
| >>>CHOICE TDD option                              | MP             |                      |   |  | REL-4          |
| >>>>3.84 Mcps TDD >>>>>Individual timeslot        | MP             | 1.1-                 |   |  | REL-4          |
| interference info                                 | IMP            | 1 to <maxts></maxts> |   |  |                |
| >>>>>Individual timeslot interference             | MP             | CITIAL TOP           | Individual timeslot interference 10.3.6.38          | Quality Margin   |                |
|   | OP             |                      | Constant<br>Value TDD<br>10.3.6.11a                 | Quality Margin   |                |
| >>>>7.68 Mcps TDD                                 |                |                      |   |  | REL-7          |
| >>>>Individual timeslot                           | MP             | 1 to                 |   |  | REL-7          |
| interference info                                 | 140            | <maxts></maxts>      | 1 1 1 1   |  | DEL 7          |
| >>>>>Individual timeslot interference             | MP             |                      | Individual<br>timeslot<br>interference<br>10.3.6.38 |  | REL-7          |
| >>>>DPCH Constant Value                           | OP             |                      | Constant<br>Value TDD<br>10.3.6.11a                 | Quality Margin   | REL-7          |
| >>>>1.28 Mcps TDD                                 |                |                      |   |  | REL-4          |
| >>>>Beacon PL Est.                                | CV-<br>houtran |                      | Enumerated (true)                                   | The presence of this IE indicates that the UE may take into account path loss estimated from beacon function physical channels. The absence indicates that UE may not take into account path loss estimated from beacon function physical channels | REL-6          |
| >>>>>TPC step size                                | MP             |                      | Integer(1,2,3                                       |  | REL-4          |
| >>>>Primary CCPCH Tx Power                        | OP             |                      | Primary<br>CCPCH Tx<br>Power<br>10.3.6.59           | For Pathloss<br>Calculation  |                |

| Condition | Explanation  |  |  |  |  |  |
|-----------|--|--|--|--|--|--|
| algo      | The IE is mandatory present if the IE "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is   |  |  |  |  |  |
|           | not needed   |  |  |  |  |  |
| houtran   | This IE is optional in Cell Update Confirm, Physical Channel Reconfiguration, Radio Bearer Reconfiguration, Radio Bearer Release, Radio Bearer Setup, Transport Channel Reconfiguration and Uplink Physical Channel Control. The IE is not included in the Handover To UTRAN Command |  |  |  |  |  |

## 10.3.6.92 Uplink DPCH power control info Post

Parameters used by UE to set DPCH initial output power and to use for closed-loop power control.

| Information Element/Group name | Need | Multi | Type and reference                      | Semantics description   | Version |
|--------------------------------|------|-------|---|---|---------|
| CHOICE mode                    | MP   |       | 10.0.0.00                               | uocompaion  |         |
| >FDD                           |      |       |   |   |         |
| >>DPCCH Power offset           | MP   |       | Integer(-<br>11050 by<br>step of 4)     | In dB   |         |
| >>PC Preamble                  | MP   |       | Integer (07)                            | in number of frames   |         |
| >>SRB delay                    | MP   |       | Integer (07)                            | In number of frames   |         |
| >TDD                           |      |       |   |   |         |
| >>UL target SIR                | MP   |       | Real (-11<br>20 by step of<br>0.5dB)    | In dB For 1.28 Mcps TDD this parameter represents PRXDPCHdes with range Integer(- 12058 by step of 1) dBm | REL-4   |
| >>CHOICE TDD option            | MP   |       |   |   | REL-4   |
| >>>3.84 Mcps TDD               |      |       |   |   | REL-4   |
| >>>>UL Timeslot Interference   | MP   |       | UL<br>Interference<br>TDD<br>10.3.6.87a |   |         |
| >>>7.68 Mcps TDD               |      |       |   |   | REL-7   |
| >>>>UL Timeslot Interference   | MP   |       | UL<br>Interference<br>TDD<br>10.3.6.87a |   | REL-7   |
| >>>1.28 Mcps TDD               |      |       |   | (no data)   | REL-4   |

| Condition | Explanation   |
|-----------|---|
| algo      | The IE is mandatory present if the IE "Power Control    |
|           | Algorithm" is set to "algorithm 1", otherwise the IE is |
|           | not needed  |

#### 10.3.6.93 Uplink DPCH power control info Pre

Parameters used by UE to set DPCH initial output power and to use for closed-loop power control in FDD and parameters for uplink open loop power control in 3.84 Mcps TDD and 7.68 Mcps TDD.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| CHOICE mode                    | MP   |       |                    |                       |         |

| Information Element/Group name | Need    | Multi | Type and reference                          | Semantics description  | Version |
|--------------------------------|---------|-------|---|--|---------|
| >FDD                           |         |       |   | •  |         |
| >>Power Control Algorithm      | MP      |       | Enumerated<br>(algorithm 1,<br>algorithm 2) | Specifies algorithm to be used by UE to interpret TPC commands |         |
| >>TPC step size                | CV-algo |       | Integer (1, 2)                              | In dB  |         |
| >TDD                           |         |       |   | (No data)  |         |
| >>CHOICE TDD option            | MP      |       |   |  | REL-4   |
| >>>3.84 Mcps TDD               |         |       |   |  | REL-4   |
| >>DPCH Constant Value          | MP      |       | Constant<br>Value TDD<br>10.3.6.11a         | Quality Margin   |         |
| >>>7.68 Mcps TDD               |         |       |   |  | REL-7   |
| >>DPCH Constant Value          | MP      |       | Constant<br>Value TDD<br>10.3.6.11a         | Quality Margin   | REL-7   |
| >>>1.28 Mcps TDD               |         |       |   | (no data)  | REL-4   |

| Condition | Explanation  |  |  |
|-----------|--|--|--|
| algo      | The IE is mandatory present if the IE "Power Control Algorithm" is set to "algorithm 1", otherwise the IE is |  |  |
|           | not needed   |  |  |

# 10.3.6.94 Uplink Timeslots and Codes

NOTE: Only for 1.28 Mcps TDD and 3.84 Mcps TDD.

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description  |
|--------------------------------|------|-------|--|--|
| Dynamic SF usage               | MP   |       | Boolean  |  |
| First Individual timeslot info | MP   |       | Individual<br>timeslot info<br>10.3.6.37   | Individual timeslot info for the first timeslot used by the physical layer.    |
| First timeslot Code List       | MP   | 12    |  | Code list used in the timeslot.<br>given in First individual<br>timeslot info. |
| >Channelisation Code           | MP   |       | Enumerated(<br>(1/1),)(2/1),(<br>2/2),(4/1)(4/<br>4),(8/1)(8/8)<br>,(16/1)(16/1<br>6)) |  |
| CHOICE more timeslots          | MP   |       |  |  |
| >No more timeslots             |      |       |  | (no data)  |
| >Consecutive timeslots         |      |       |  |  |

| Information Element/Group name   | Need | Multi                                | Type and reference   | Semantics description  |
|----------------------------------|------|--------------------------------------|--|--|
| >>Number of additional timeslots | MP   |                                      | Integer(1m<br>axTS-1)  | The timeslots used by the physical layer shall be timeslots: N mod maxTS (N+1) mod maxTS (N+k) mod maxTS in that order, where N is the timeslot number in the First individual timeslot info and k the Number of additional timeslots. The additional timeslots shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) as the first timeslot. |
| >Timeslot list                   |      |                                      |  |  |
| >>Additional timeslot list       | MP   | 1 to<br><maxts-<br>1&gt;</maxts-<br> |  | The first instance of this parameter corresponds to the timeslot that shall be used second by the physical layer, the second to the timeslot that shall be used third and so on.   |
| >>>CHOICE parameters             | MP   |                                      |  |  |
| >>>Same as last                  |      |                                      |  |  |
| >>>>Timeslot number              | MP   |                                      | Timeslot<br>Number<br>10.3.6.84  | This physical layer shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) for this timeslot as for the last one.   |
| >>>New parameters                |      |                                      |  |  |
| >>>>Individual timeslot info     | MP   |                                      | Individual<br>timeslot info<br>10.3.6.37   |  |
| >>>>Code List                    | MP   | 12                                   |  |  |
| >>>>>Channelisation Code         | MP   |                                      | Enumerated(<br>(1/1),)(2/1),(<br>2/2),(4/1)(4/<br>4),(8/1)(8/8)<br>,(16/1)(16/1<br>6)) |  |

## 10.3.6.94a Uplink Timeslots and Codes LCR

NOTE: Only for 1.28 Mcps TDD

| Information               | Need | Multi | Type and     | Semantics                 |
|---------------------------|------|-------|--------------|---------------------------|
| Element/Group name        |      |       | reference    | description               |
| Dynamic SF usage          | MP   |       | Boolean      |                           |
| First Individual timeslot | MP   |       | Individual   | Individual timeslot info  |
| info                      |      |       | timeslot     | for the first timeslot    |
|                           |      |       | info         | used by the physical      |
|                           |      |       | 10.3.6.37    | layer.                    |
| First timeslot Code List  | MP   | 12    |              | Code list used in the     |
|                           |      |       |              | timeslot. given in First  |
|                           |      |       |              | individual timeslot info. |
| >Channelisation Code      | MP   |       | Enumerate    |                           |
|                           |      |       | d((1/1),)(2/ |                           |
|                           |      |       | 1),(2/2),(4/ |                           |
|                           |      |       | 1)(4/4),(8/  |                           |
|                           |      |       | 1)(8/8),(1   |                           |
|                           |      |       | 6/1)(16/1    |                           |
|                           |      |       | 6))          |                           |

| Information                               | Need                  | Multi                      | Type and  | Semantics   |
|---|-----------------------|----------------------------|---|---|
| Element/Group name                        | 11000                 | l linuiti                  | reference   | description   |
| >PLCCH Info                               | CV-                   |                            | PLCCH   | •   |
|   | no_DL_D               |                            | Info  |   |
| CHOICE mare timeslets                     | PCH<br>MP             |                            | 10.3.6.50a  |   |
| >No more timeslots                        | IVIP                  |                            |   | (no data)   |
| >Consecutive timeslots                    |                       |                            |   | (110 data)  |
| >>Number of additional timeslots          | MP                    |                            | Integer(1<br>maxTS-1)   | The timeslots used by the physical layer shall be timeslots: N mod maxTS (N+1) mod maxTS (N+k) mod maxTS  |
| Timeslet list                             |                       |                            |   | in that order, where N is the timeslot number in the First individual timeslot info and k the Number of additional timeslots. The additional timeslots shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) as the first timeslot. |
| >Timeslot list >>Additional timeslot list | MP                    | 1 to                       |   | The first instance of this  |
| >>Additional timestot list                | IVIF                  | <maxt<br>S-1&gt;</maxt<br> |   | parameter corresponds to the timeslot that shall be used second by the physical layer, the second to the timeslot that shall be used third and so on.   |
| >>>CHOICE parameters                      | MP                    |                            |   |   |
| >>>Same as last                           |                       |                            |   |   |
| >>>>Timeslot number                       | MP                    |                            | Timeslot<br>Number<br>10.3.6.84                                     | This physical layer shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) for this timeslot as for the last one.  |
| >>>New parameters                         |                       |                            |   |   |
| >>>>Individual timeslot info              | MP                    |                            | Individual<br>timeslot<br>info<br>10.3.6.37                         |   |
| >>>>Code List                             | MP                    | 12                         |   |   |
| >>>>>Channelisation Code                  | MP                    |                            | Enumerate d((1/1),)(2/1),(2/2),(4/1)(4/4),(8/1)(8/8),(16/1)(16/16)) |   |
| >>>>> PLCCH Info                          | CV-<br>no_DL_D<br>PCH |                            | PLCCH<br>Info<br>10.3.6.50a   | Default is same as set of parameter values as assigned to last timeslot   |

| Condition  | Explanation  |  |  |
|------------|--|--|--|
| No_DL_DPCH | This IE is mandatory present for 1.28 Mcps TDD only in the case that Uplink Timeslots and Codes are assigned for UL DPCH and no DL DPCH is |  |  |
|            | allocated to the UE.   |  |  |

# 10.3.6.94b Uplink Timeslots and Codes VHCR

NOTE: Only for 7.68 Mcps TDD

| Information Element/Group name                            | Need | Multi                                | Type and reference  | Semantics description  | Version        |
|---|------|--------------------------------------|---|--|----------------|
| Dynamic SF usage  | MP   |                                      | Boolean   |  | REL-7          |
| First Individual timeslot info                            | MP   |                                      | Individual<br>timeslot info<br>10.3.6.37  | Individual timeslot info for the first timeslot used by the physical layer.  | REL-7          |
| First timeslot Code List                                  | MP   | 12                                   |   | Code list used in<br>the timeslot. given<br>in First individual<br>timeslot info.  | REL-7          |
| >Channelisation Code                                      | MP   |                                      | Enumerated( (1/1),)(2/1),( 2/2),(4/1)(4/4),(8/1)(8/8.16/1) (16/16).(32/1)(32/32)) |  | REL-7          |
| CHOICE more timeslots                                     | MP   |                                      |   |  | REL-7          |
| >No more timeslots  |      |                                      |   | (no data)  | REL-7          |
| >Consecutive timeslots                                    |      |                                      |   |  | REL-7          |
| >>Number of additional timeslots                          | MP   |                                      | Integer(1m<br>axTS-1)   | The timeslots used by the physical layer shall be timeslots: N mod maxTS (N+1) mod maxTS in that order, where N is the timeslot number in the First individual timeslot info and k the Number of additional timeslots. The additional timeslots shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) as the first timeslot. | REL-7          |
| >Timeslot list >>Additional timeslot list                 | MP   | 1 to<br><maxts-<br>1&gt;</maxts-<br> |   | The first instance of this parameter corresponds to the timeslot that shall be used second by the physical layer, the second to the timeslot that shall be used third and so on.   | REL-7<br>REL-7 |
| >>>CHOICE parameters                                      | MP   |                                      |   |  | REL-7          |
| >>>>Same as last >>>>>Timeslot number  >>>>New parameters | MP   |                                      | Timeslot<br>Number<br>10.3.6.84   | This physical layer shall use the same parameters (e.g. channelisation codes, midamble shifts etc.) for this timeslot as for the last one.   | REL-7<br>REL-7 |

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description | Version |
|--------------------------------|------|-------|--|-----------------------|---------|
| >>>>Individual timeslot info   | MP   |       | Individual<br>timeslot info<br>10.3.6.37   | -                     | REL-7   |
| >>>>Code List                  | MP   | 12    |  |                       | REL-7   |
| >>>>>Channelisation Code       | MP   |       | Enumerated( (1/1),)(2/1),( 2/2),(4/1)(4/4),(8/1)(8/8) .(16/1) (16/16).(32/1)(32/32)) |                       | REL-7   |

# 10.3.6.95 Uplink Timing Advance

NOTE: Only for 3.84 Mcps TDD.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   | Version |
|--------------------------------|------|-------|--------------------|---|---------|
| UL Timing Advance              | MP   |       | Integer<br>(063)   | Absolute timing<br>advance value to<br>be used to avoid<br>large delay spread<br>at the NodeB |         |

## 10.3.6.95a Extended Uplink Timing Advance

NOTE: Only for 3.84 and 7.68 Mcps TDD.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   | Version |
|--------------------------------|------|-------|--------------------|---|---------|
| CHOICE TDD mode                |      |       |                    |   | REL-7   |
| >3.84 Mcps TDD                 |      |       |                    |   | REL-7   |
| >>Extended UL Timing Advance   | MP   |       | Integer<br>(0255)  | Absolute timing advance value to be used to avoid large delay spread at the NodeB             | REL-7   |
| >7.68.Mcps TDD                 |      |       |                    |   | REL-7   |
| >>Extended UL Timing Advance   | MP   |       | Integer<br>(0511)  | Absolute timing<br>advance value to<br>be used to avoid<br>large delay spread<br>at the NodeB | REL-7   |

# 10.3.6.96 Uplink Timing Advance Control

NOTE: Only for TDD

| Information Element/Group | Need | Multi | Type and  | Semantics         | Version |
|---------------------------|------|-------|-----------|-------------------|---------|
| name                      |      |       | reference | description       |         |
| CHOICE Timing Advance     | MP   |       |           |                   |         |
| >Disabled                 |      |       | Null      | Indicates that no |         |
|                           |      |       |           | timing advance is |         |
|                           |      |       |           | applied           |         |
| >Enabled                  |      |       |           |                   |         |
| >>CHOICE TDD option       | MP   |       |           |                   | REL-4   |
| >>>3.84 Mcps TDD          |      |       |           |                   | REL-4   |
| >>>>UL Timing Advance     | MD   |       | Uplink    | Absolute timing   |         |
|                           |      |       | Timing    | advance value to  |         |
|                           |      |       | Advance   | be used to avoid  |         |

| Information Element/Group name       | Need | Multi | Type and reference  | Semantics description   | Version |
|--------------------------------------|------|-------|---|---|---------|
|                                      |      |       | 10.3.6.95   | large delay spread<br>at the NodeB.<br>Default value is<br>the existing value<br>for uplink timing<br>advance.  |         |
| >>Extended Timing Advance            | OP   |       | Extended UL<br>Timing<br>Advance<br>Control<br>10.3.6.95a |   | REL-7   |
| >>>Activation Time                   | OP   |       | Activation<br>Time<br>10.3.3.1                            | Frame number timing advance is to be applied. This IE is required when a new UL Timing Advance adjustment is specified and Activation Time is not otherwise specified in the RRC message. |         |
| >>>7.68 Mcps TDD                     |      |       |   |   | REL-7   |
| >>>Extended UL Timing Advance        | MD   |       | Extended<br>Uplink<br>Timing<br>Advance<br>10.3.6.95a     | Absolute timing advance value to be used to avoid large delay spread at the NodeB. Default value is the existing value for uplink timing advance.   | REL-7   |
| >>>Activation Time                   | OP   |       | Activation<br>Time<br>10.3.3.1                            | Frame number timing advance is to be applied. This IE is required when a new UL Timing Advance adjustment is specified and Activation Time is not otherwise specified in the RRC message. | REL-7   |
| >>1.28 Mcps TDD                      |      |       |   | (no data)   | REL-4   |
| >>>Uplink synchronisation parameters | MD   |       |   | Default: Uplink<br>synchronisation<br>step size is 1.<br>Uplink<br>synchronisation<br>frequency is 1.   | REL-4   |
| >>>>Uplink synchronisation step size | MP   |       | Integer(18)   | This parameter specifies the step size to be used for the adjustment of the uplink transmission timing  | REL-4   |
| >>>>Uplink synchronisation frequency | MP   |       | Integer(18)   | This parameter specifies the frequency of the adjustment of the uplink transmission timing  | REL-4   |

| Information Element/Group name | Need | Multi | Type and reference                       | Semantics description  | Version |
|--------------------------------|------|-------|--|--|---------|
| >>>Synchronisation parameters  | OP   |       |  | •  |         |
| >>>SYNC_UL codes bitmap        | MP   |       | SYNC_UL<br>codes<br>bitmap<br>10.3.6.780 |  | REL-4   |
| >>>FPACH info                  | MP   |       | FPACH info<br>10.3.6.35a                 |  | REL-4   |
| >>>>PRX <sub>UpPCHdes</sub>    | MP   |       | Integer(-<br>12058 by<br>step of 1)      | In dBm   | REL-4   |
| >>>SYNC_UL procedure           | MD   |       |  | Default is:<br>Max SYNC_UL<br>Transmission is 2.<br>Power Ramp Step<br>is 2. | REL-4   |
| >>>>Max SYNC_UL Transmissions  | MP   |       | Integer(1,2,4<br>,8)                     | Maximum numbers of SYNC_UL transmissions in a power ramping sequence.        | REL-4   |
| >>>>Power Ramp Step            | MP   |       | Integer(0,1,2<br>,3)                     | In dB  | REL-4   |

# 10.3.6.97 E-DCH Info

| Information Element/Group name                              | Need | Multi | Type and reference                        | Semantics description  | Version |
|---|------|-------|---|--|---------|
| MAC-es/e reset indicator                                    | OP   |       | Enumerated (true)                         | TRUE Indicates the MAC-es/e entity needs to be reset.  | REL-6   |
| CHOICE mode   | MP   |       |   |  | REL-7   |
| >FDD  |      |       |   |  | REL-7   |
| >>E-DPCCH info  | OP   |       | E-DPCCH<br>Info<br>10.3.6.98              |  | REL-6   |
| >>E-DPDCH info  | OP   |       | E-DPDCH<br>info<br>10.3.6.99              |  | REL-6   |
| >>Scheduled Transmission configuration                      | OP   |       |   |  | REL-6   |
| >>>2ms scheduled transmission grant HARQ process allocation | MD   |       | Bitstring (8)                             | MAC-d PDUs belonging to MAC-d flows not configured with a "Max MAC-e PDU contents size" are only allowed to be transmitted in those processes for which the bit is set to "1". Bit 0 corresponds to HARQ process 0, bit 1 corresponds to HARQ process 1, Default value is: transmission in all HARQ processes is allowed. Bit 0 is the first/leftmost bit of the bit string. | REL-6   |
| >>>Serving Grant  | OP   |       |   | bit of the bit string.   | REL-6   |
| >>>Serving Grant value                                      | MP   |       | Integer<br>(037,38)                       | (037) indicates<br>E-DCH serving<br>grant index as<br>defined in [15];<br>index 38 means<br>zero grant.  | REL-6   |
| >>>Primary/Secondary Grant<br>Selector                      | MP   |       | Enumerated<br>("primary",<br>"secondary") | Indicates whether<br>the Serving Grant<br>is received with a<br>Primary E-RNTI or<br>Secondary E-<br>RNTI  | REL-6   |
| >>UL 16QAM settings   | OP   |       | UL 16QAM<br>settings<br>10.3.6.86a        | Presence of this IE indicates that the UE should operate in 16QAM mode; absence indicates that the UE is not to operate in 16QAM mode. See Note 1.   | REL-7   |
| >TDD  |      |       |   |  | REL-7   |
| >>E-RUCCH info  | OP   |       | E-RUCCH<br>Info<br>10.3.6.103             |  | REL-7   |

| >>E-PUCH info  | OP |  | E-PUCH Info  |  | REL-7 |  |
|--|----|--|--------------|--|-------|--|
|  |    |  | 10.3.6.104   |  |       |  |
| >>Non-scheduled transmission   | OP |  | Non-         |  | REL-7 |  |
| grant info   |    |  | scheduled    |  |       |  |
|  |    |  | transmission |  |       |  |
|  |    |  | grant info   |  |       |  |
|  |    |  | 10.3.6.41c   |  |       |  |
| NOTE 1: If this IE is not present, the indices signaled on the E-AGCH refer to the Mapping of Absolute Grant |    |  |              |  |       |  |

# NOTE 1: If this IE is not present, the indices signaled on the E-AGCH refer to the Mapping of Absolute Grant Value Table 16B in [27].

## 10.3.6.98 E-DPCCH Info

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description   | Version |
|--------------------------------|------|-------|---|---|---------|
| E-DPCCH/DPCCH power offset     | MP   |       | Integer (08)  | Refer to quantization of the power offset in [28]   | REL-6   |
| Happy bit delay condition      | MP   |       | Enumerated<br>(2ms,<br>10ms,20ms,<br>50ms,<br>100ms,<br>200ms,<br>500ms,<br>1000ms) | To be used when determining the setting of the happy bit (see [15])   | REL-6   |
| E-TFC Boost Info               | OP   |       | E-TFC Boost<br>Info<br>10.3.6.106   | Absence of this IE means that boosting of E-DPCCH is disabled   | REL-7   |
| E-DPDCH power interpolation    | OP   |       | Boolean   | True means E-DPDCH power interpolation formula is used, False means E-DPDCH power extrapolation formula is used for the computation of the gain factor $\beta_{ed}$ according to [29] | REL-7   |

#### 10.3.6.99 E-DPDCH Info

| Information Element/Group name                            | Need | Multi       | Type and reference  | Semantics description  | Version |
|---|------|-------------|---|--|---------|
| E-TFCI table index  | MP   |             | Integer (01)  | Indicates which<br>standardised E-<br>TFCI TB size<br>table shall be<br>used. See Note<br>3. | REL-6   |
| E-DCH minimum set E-TFCI                                  | MD   |             | Integer<br>(0127)   | See [15];<br>Absence means<br>no E-DCH<br>minimum set  | REL-6   |
| Reference E-TFCIs   | MP   | 1 to 8      |   | See [29]   | REL-6   |
| >Reference E-TFCI   | MP   |             | Integer<br>(0127)   |  | REL-6   |
| >Reference E-TFCI PO                                      | MP   |             | Integer (029,   | Refer to<br>quantization of<br>the power offset<br>in [28]                                   | REL-6   |
|   |      |             | 30, 31)   | Values 30 and<br>31 are only used<br>for E-TFCI ><br>ETFCI Boost                             | REL-7   |
| Maximum channelisation codes                              | MP   |             | Enumerated<br>(sf256, sf128,<br>sf64, sf32,<br>sf16, sf8, sf4,<br>2sf4, 2sf2,<br>2sf2and2sf4) |  | REL-6   |
| PL <sub>non-max</sub>                                     | MP   |             | Real (0.44<br>1.0 by step of<br>0.04)   | As defined in [27]   | REL-6   |
| Scheduling Information Configuration                      | MP   |             |   |  | REL-6   |
| >Periodicity for Scheduling Info – no grant               | MD   |             | Enumerated<br>(everyEDCHT<br>TI,4,10,20,50,<br>100,200,500,1                                  | Values in ms. Default value is "no report" NOTE 1.   | REL-6   |
| >Periodicity for Scheduling Info – grant                  | MD   |             | Enumerated<br>(everyEDCHT<br>TI,4,10,20,50,<br>100,200,500,1<br>000)                          | Values in ms. Default value is "no report" NOTE 1.   | REL-6   |
| >Power Offset for Scheduling Info                         | MP   |             | Integer (06)  | Only used when<br>no MACd PDUs<br>are included in<br>the same MACe<br>PDU. Unit is in<br>dB. | REL-6   |
| 3-Index-Step Threshold                                    | MD   |             | Integer (037)   | Refers to an index in the "SG-Table" (see [15]). Default value is 0. NOTES 2, 3.             | REL-6   |
| 2-Index-Step Threshold  NOTE 1: If the Periodicity is set | MD   | e F-DCH TTI | Integer (037)   | Refers to an index in the "SG-Table" (see [15]). Default value is 0. NOTES 2, 3.             | REL-6   |

periodicity value as 10ms.

- NOTE 2: If the 3-index-Step Threshold value is greater than 2-index-Step Threshold, the UE behaviour is unspecified.
- NOTE 3: If the UE is operating in 16QAM mode, the value of "E-TFCI table index" is increased by 2, and indices in the SG-Table refer to Scheduling Grant Table 2 in [15].

#### 10.3.6.100 E-AGCH Info

Includes the configuration for the E-DCH related Absolute Grant Channel.

| Information Element/Group name           | Need   | Multi                      | Type and reference                                 | Semantics description   | Version |
|--|--|----------------------------|--|---|---------|
| CHOICE mode                              | MP   |                            |  | •   | REL-7   |
| >FDD                                     |  |                            |  |   | REL-7   |
| >>E-AGCH Channelisation                  | MP   |                            | Integer  |   | REL-6   |
| Code                                     |  |                            | (0255)   |   |         |
| >TDD                                     |  |                            |  |   | REL-7   |
| >>CHOICE TDD Option                      | MP   |                            |  |   | REL-7   |
| >>>3.84 Mcps TDD                         |  |                            |  |   | REL-7   |
| >>>>Long Term Grant Indicator            | MD   |                            | Boolean  | False = Short   | REL-7   |
|  |  |                            |  | Term True = Long Term Default = False (Short Term)  |         |
| >>>>Length of TTRI field                 | MP   |                            | Integer(112  | Indicated length of<br>the bitmap used to<br>indicate which of<br>the timeslots<br>configured for E-<br>DCH are allocated | REL-7   |
| >>>>E-AGCH set configuration             | MP   | <1 to<br>maxNumE-<br>AGCH> |  |   | REL-7   |
| >>>>TS number                            | MP   |                            | Integer(014  |   | REL-7   |
| >>>>Channelisation code                  | MP   |                            | Enumerated(<br>16/1,<br>16/2,16/16                 |   | REL-7   |
| >>>>CHOICE Burst Type                    |  |                            |  |   | REL-7   |
| >>>>Type 1                               |  |                            |  |   | REL-7   |
| >>>>>Midamble allocation mode            | MP   |                            | Enumerated(<br>Default,<br>Common,<br>UE specific) |   | REL-7   |
| >>>>>Midamble configuration burst type 1 | MP   |                            | Enumerated(<br>4, 8, 16)                           |   | REL-7   |
| >>>>>Midamble shift                      | CV-UE<br>specific                            |                            | Integer(015  |   | REL-7   |
| >>>>Type 2                               |  |                            |  |   |         |
| >>>>>Midamble allocation mode            | MP   |                            | Enumerated(<br>Default,<br>Common,<br>UE specific) |   | REL-7   |
| >>>>>Midamble configuration              | MP   |                            | Enumerated(  |   | REL-7   |
| burst type 2                             | <u>                                     </u> |                            | 3, 6)  |   | <u></u> |
| >>>>>Midamble shift                      | CV-UE<br>specific                            |                            | Integer(05)  |   | REL-7   |
| >>>E-AGCH BLER target                    | MP   | _                          | Real(-3.15 to 0 step 0.05)                         |   | REL-7   |
| >>>7.68 Mcps TDD                         |  |                            |  |   | REL-7   |
| >>>>Long Term Grant Indicator            | MD   |                            | Boolean  | False = Short Term True = Long Term Default = False (Short Term)  | REL-7   |
| >>>>Length of TTRI field                 | MP   |                            | Integer(112  | Indicated length of<br>the bitmap used to<br>indicate which of<br>the timeslots<br>configured for E-<br>DCH are allocated | REL-7   |
| >>>E-AGCH set configuration              | MP   | <1 to<br>maxNumE-<br>AGCH> |  |   | REL-7   |
| >>>>TS number                            | MP   |                            | Integer(014  |   | REL-7   |

| >>>>Channelisation code                  | MP                |                            | Enumerated( 32/1,  |  | REL-7 |
|--|-------------------|----------------------------|--|--|-------|
|  |                   |                            | 32/2,32/32   |  |       |
| >>>>CHOICE Burst Type                    |                   |                            | ,  |  | REL-7 |
| >>>>Type 1                               |                   |                            |  |  | REL-7 |
| >>>>>Midamble allocation mode            | MP                |                            | Enumerated(<br>Default,<br>Common,<br>UE specific)                   |  | REL-7 |
| >>>>>Midamble configuration burst type 1 | MP                |                            | Enumerated(<br>4, 8, 16)   |  | REL-7 |
| >>>>>Midamble shift                      | CV-UE<br>specific |                            | Integer(015  |  | REL-7 |
| >>>>Type 2                               |                   |                            |  |  |       |
| >>>>> Midamble allocation mode           | MP                |                            | Enumerated( Default, Common, UE specific)                            |  | REL-7 |
| >>>>>Midamble configuration burst type 2 | MP                |                            | Enumerated( 3, 6)  |  | REL-7 |
| >>>>>Midamble shift                      | CV-UE<br>specific |                            | Integer(05)  |  | REL-7 |
| >>>E-AGCH BLER target                    | MP                |                            | Real(-3.15 to 0 step 0.05)   |  | REL-7 |
| >>>1.28 Mcps TDD                         |                   |                            |  |  | REL-7 |
| >>>>RDI Indicator                        | MP                |                            | Boolean  | TRUE indicates a<br>RDI field is<br>present on E-<br>AGCH, | REL-7 |
| >>>>TPC step size                        | MP                |                            | Integer (1, 2, 3)  | dB.  | REL-7 |
| >>>E-AGCH set configuration              | MP                | <1 to<br>maxNumE-<br>AGCH> |  |  | REL-7 |
| >>>>Timeslot number                      | MP                |                            | Integer (06)   |  | REL-7 |
| >>>>First Channelisation code            | MP                |                            | Enumerated ((16/1)(16/16))   |  | REL-7 |
| >>>>Second Channelisation code           | MP                |                            | Enumerated ((16/1)(16/16))   |  | REL-7 |
| >>>>Midamble Allocation mode             | MP                |                            | Enumerated (Default midamble, Common midamble, UE specific midamble) |  | REL-7 |
| >>>>Midamble configuration               | MP                |                            | Integer (2, 4,<br>6, 8, 10, 12,<br>14, 16)                           |  | REL-7 |
| >>>> Midamble Shift                      | CV-UE<br>specific |                            | Integer<br>(015)   |  | REL-7 |
| >>>E-AGCH BLER target                    | MP                |                            | Real(-3.15 to 0 step 0.05)   |  | REL-7 |

### 10.3.6.101 E-HICH Info

Includes the configuration for the E-DCH related HARQ Acknowledgement Indicator Channel.

| Information Element/Group name | Need | Multi                      | Type and reference                  | Semantics description   | Version |
|--------------------------------|------|----------------------------|-------------------------------------|---|---------|
| CHOICE mode                    | MP   |                            |                                     |   | REL-7   |
| >FDD                           |      |                            |                                     |   | REL-7   |
| >>Channelisation Code          | MP   |                            | Integer<br>(0127)                   |   | REL-6   |
| >>Signature Sequence           | MP   |                            | Integer<br>(039)                    |   | REL-6   |
| >TDD                           |      |                            |                                     |   | REL-7   |
| >>CHOICE TDD Option            | MP   |                            |                                     |   | REL-7   |
| >>>3.84 Mcps TDD               |      |                            |                                     |   | REL-7   |
| >>>N <sub>E-HICH</sub>         | MP   |                            | Integer(444                         | Minimum number<br>of slots between<br>start last active<br>slot of E-DCH TTI<br>and start of<br>ACK/NACK on E-<br>HICH (see[?}) | REL-7   |
| >>>TS number                   | MP   |                            | Integer(014                         |   | REL-7   |
| >>>Channelisation Code         | MP   |                            | Enumerated(<br>16/1,<br>16/2,16/16) |   | REL-7   |
| >>>Burst type                  | MP   |                            | Enumerated(<br>Type1,<br>Type2)     |   | REL-7   |
| >>>Midambe allocation mode     | MP   |                            | Enumerated(<br>Default,<br>Common)  |   | REL-7   |
| >>>7.68 Mcps TDD               |      |                            | ,                                   |   | REL-7   |
| >>>N <sub>E-HICH</sub>         | MP   |                            | Integer(444                         | Minimum number<br>of slots between<br>start last active<br>slot of E-DCH TTI<br>and start of<br>ACK/NACK on E-<br>HICH (see[?]) | REL-7   |
| >>>TS number                   | MP   |                            | Integer(014                         |   | REL-7   |
| >>>Channelisation Code         | MP   |                            | Enumerated(<br>32/1,<br>32/2,32/32) |   | REL-7   |
| >>>Burst type                  | MP   |                            | Enumerated(<br>Type1,<br>Type2)     |   | REL-7   |
| >>>Midambe allocation mode     | MP   |                            | Enumerated(<br>Default,<br>Common)  |   | REL-7   |
| >>>1.28 Mcps TDD               |      |                            | ,                                   |   | REL-7   |
| >>>> N <sub>E-HICH</sub>       | MP   |                            | Integer<br>(415)                    | Minimum number of slots between start last active slot of E-DCH TTI and start of ACK/NACK on E-HICH                             | REL-7   |
| >>>E-HICH set configuration    |      | <1 to<br>maxNumE-<br>HICH> |                                     |   | REL-7   |
| >>>>El                         | MP   |                            | Integer (03)                        |   | REL-7   |
| >>>>Timeslot number            | MP   |                            | Integer (06)                        |   | REL-7   |
| >>>>Channelisation code        | MP   |                            | Enumerated ((16/1)(16/16))          |   | REL-7   |
| >>>>Midamble Allocation mode   | MP   |                            | Enumerated<br>(Default<br>midamble, |   | REL-7   |

|                            |          | UE specific midamble) |       |
|----------------------------|----------|-----------------------|-------|
| 1 A 1 1 1 C C              | 145      |                       | 55    |
| >>>>Midamble configuration | MP       | Integer (2, 4,        | REL-7 |
|                            |          | 6, 8, 10, 12,         |       |
|                            |          | 14, 16)               |       |
| >>>>Midamble Shift         | CV-UE    | Integer               | REL-7 |
|                            | specific | (015)                 |       |

# 10.3.6.102 E-RGCH Info (FDD only)

Includes the configuration for the E-DCH related Relative Grant Channel. The E-RGCH is using the same channelisation code as configured for the E-HICH channel (see subclause 10.3.6.101).

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  | Version |
|--------------------------------|------|-------|--------------------|--|---------|
| Signature Sequence             | MP   |       | Integer(039        | _  | REL-6   |
| RG combination index           | MP   |       | Integer(05)        | Cells with an index equal to the index of the Serving E-DCH cell belong to the Serving E-DCH RLS. The E-RGCH from these cells have RG commands which for the UE are known to be the same as the RG commands from the Serving E-DCH cell. | REL-6   |

# 10.3.6.103 E-RUCCH Info (TDD only)

| Information Element/Group name       | Need | Multi   | Type and reference   | Semantics description   | Version |
|--------------------------------------|------|---------|--|---|---------|
| CHOICE TDD mode                      |      |         |  | •   | REL-7   |
| >3.84/7.68 Mcps TDD                  |      |         |  |   | REL-7   |
| >>E-RUCCH constant value             | MP   |         | Integer (-<br>3510)  | Power to be used  | REL-7   |
| >>E-RUCCH persistence scaling factor | MP   |         | Real(0.90.2<br>by step of<br>0.1)  |   | REL-7   |
| >>T-RUCCH                            | MD   |         | Integer(403<br>20 by step of<br>40)  | Default =200ms If T-RUCH expires before Grant is received then uE should send scheduling information again on E-RUCH        | REL-7   |
| >>E-RUCCH timeslot number            | MD   |         | Timeslot<br>number<br>10.3.6.84  | Default is same as<br>PRACH timeslot<br>number  | REL-7   |
| >>E-RUCCH midamble                   | MD   |         | Enumerated(<br>Direct,<br>Direct/Invert<br>ed)                               | Default is as<br>PRACH midamble   | REL-7   |
| >>T-Adv                              | MD   |         | Enumerated<br>(1, 2, 4, 8,<br>16, 32, 128,<br>infinity)                      | Default is 1 second   | REL-7   |
| >>T-SCHED                            | MD   |         | Enumerated<br>(0, 40ms,<br>80ms,<br>160ms,<br>25oms,<br>1sec, 2sec,<br>4sec) | Default is 0<br>second (include<br>Scheduling<br>Information in<br>every MAC-e<br>PDU)                                      | REL-7   |
| >>CHOICE TDD option                  |      |         |  |   | REL-7   |
| >>>3.84 Mcps TDD                     |      |         |  |   | REL-7   |
| >>>CHOICE SF                         | MP   |         |  |   | REL-7   |
|                                      | IVIE |         |  |   |         |
| >>>>SF16 >>>>>Channelisation Code    | MP   | 1 to 8  |  |   | REL-7   |
| List >>>>>Channelisation code        | MP   |         | Enumerated ((16/1)(16/8))  | There is a 1:1 mapping between spreading code and midamble shift defined in [30] for channelisation codes (16/1) to (16/8). | REL-7   |
|                                      |      |         |  | NOTE:<br>channelisation<br>codes (16/9) to<br>(16/16) are not to<br>be used.  |         |
| >>>>SF8                              |      |         |  |   | REL-7   |
| >>>>>Channelisation Code List        | MP   | 1 to 8  |  |   | REL-7   |
| >>>>>Channelisation Code             | MP   |         | Enumerated(<br>(8/1)(8/8))   |   | REL-7   |
| >>>7.68 Mcps TDD                     |      |         |  |   | REL-7   |
| >>>>CHOICE SF                        | MP   |         |  |   | REL-7   |
| >>>>SF32                             |      |         |  |   | REL-7   |
| >>>>>Channelisation Code             | MP   | 1 to 16 |  |   | REL-7   |

| 1:-4                              |    |                                     |  |  |                |
|-----------------------------------|----|-------------------------------------|--|--|----------------|
| List >>>>>Channelisation code     | MP |                                     | Enumerated ((32/1)(32/16))   | There is a 1:1 mapping between spreading code and midamble shift defined in [30] for channelisation codes (32/1) to (32/16).  NOTE: channelisation codes (32/17) to (32/32) are not to | REL-7          |
| 0540                              |    |                                     |  | be used.   | DE: -          |
| >>>>SF16 >>>>>Channelisation Code | MP | 1 to 16                             |  |  | REL-7<br>REL-7 |
| List                              |    | 1 10 10                             |  |  |                |
| >>>>>Channelisation Code          | MP |                                     | Enumerated(<br>(16/1)(16/1<br>6))  |  | REL-7          |
| >1.28 Mcps TDD                    | MD |                                     | Enumerated   | Default 400  | REL-7          |
| >>T-RUCCH                         | MD |                                     | Enumerated<br>(20, 40, 60,<br>80, 120, 160,<br>200, 240,<br>280, 320,<br>400, 500,<br>600, 800,<br>1000, 2000) | Default = 120 ms If T-RUCCH expires before Grant is received then UE should send scheduling information again on E-RUCCH   | REL-7          |
| >>N-RUCCH                         | MD |                                     | Integer<br>(07)  | Default = 3 Maximum number of retransmissions of scheduling information on E- RUCCH  | REL-7          |
| >>T-WAIT                          | MD |                                     | Enumerated<br>(everyEDCH<br>TTI,<br>40,80,160,32<br>0,640,1000,2<br>000)                                       | Values in ms. Default = 40ms If T-WAIT expires then UE should send scheduling information on E- RUCCH  | REL-7          |
| >>T-SI                            | MD |                                     | Enumerated<br>(everyEDCH<br>TTI,<br>20,40,60,80,<br>160,200)   | Values in ms. Default = 40ms If periodic T-SI expires then UE should include scheduling information in a new MAC-e PDU   | REL-7          |
| >>Extended Estimation Window      | OP |                                     | Integer (25)   | Values in 5ms TTI. Indicates how many next consecutive 5ms TTIs the UE should estimate whether there is a Grant valid before sending Scheduling Infomation via E- RUCCH                | REL-7          |
| >>E-RUCCH Access Service class    | ОР | 1 to<br><maxasc<br>&gt;</maxasc<br> |  | If only "NumASC+1" (with, NumASC+1   | REL-7          |

|                               |      | 1   | 1                   | 100) 100            | 1     |
|-------------------------------|------|---|---------------------|---------------------|-------|
|                               |      |   |                     | < maxASC) ASCs      |       |
|                               |      |   |                     | are listed, the     |       |
|                               |      |   |                     | remaining           |       |
|                               |      |   |                     | (NumASC+2           |       |
|                               |      |   |                     | through maxASC)     |       |
|                               |      |   |                     | ASCs are            |       |
|                               |      |   |                     | unspecified.        |       |
| >>>E-RUCCH ASC Setting        | MD   |   | ASC setting         | The default values  | REL-7 |
|                               |      |   | 10.3.6.6            | are same as the     |       |
|                               |      |   |                     | PRACH ASC.          |       |
|                               |      |   |                     | If the "default" is |       |
|                               |      |   |                     | used for the first  |       |
|                               |      |   |                     | ASC, the default    |       |
|                               |      |   |                     | values are all      |       |
|                               |      |   |                     | available           |       |
|                               |      |   |                     | signatures and "all |       |
|                               |      |   |                     | available sub-      |       |
|                               |      |   |                     | channels" for FDD   |       |
|                               |      |   |                     | and "all available  |       |
|                               |      |   |                     | channelisation      |       |
|                               |      |   |                     | codes" and "all     |       |
|                               |      |   |                     | available           |       |
|                               |      |   |                     | subchannels" with   |       |
|                               |      |   |                     | "subchannel         |       |
|                               |      |   |                     | size=Size 1" in     |       |
|                               |      |   |                     | TDD.                |       |
| >>E-RUCCH persistence         | OP   | 1 to  |                     | multiplicity        | REL-7 |
| scaling factor list           |      | maxASCpe  |                     | corresponds to      |       |
|                               |      | rsist   |                     | the number of E-    |       |
|                               |      |   |                     | RUCCH ASCs          |       |
|                               |      |   |                     | minus 2             |       |
| >>>Persistence scaling factor | MP   |   | Real(0.90.2         |                     | REL-7 |
|                               |      |   | by step of          |                     |       |
|                               |      |   | 0.1)                |                     |       |
| >>SYNC_UL info                | OP   |   | SYNC_UL             |                     | REL-7 |
|                               |      |   | info for E-         |                     |       |
|                               |      |   | RUCCH               |                     |       |
| 77.0111.6                     |      |   | 10.3.6.78d          |                     |       |
| >>PRACH Information           | OP   | 1 <maxpr< td=""><td></td><td></td><td>REL-7</td></maxpr<> |                     |                     | REL-7 |
|                               |      | ACH_FPA   |                     |                     |       |
| Time a dat my red a r         | MD   | CH>   | Time a all - t      |                     | DEL 7 |
| >>>Timeslot number            | MP   |   | Timeslot            |                     | REL-7 |
|                               |      |   | number<br>10.3.6.84 |                     |       |
| >>> Channelisation Code List  | MP   | 1 to 2  | 10.3.0.84           |                     | REL-7 |
| >>> Channelisation Code List  | MP   | 1102  | Enumerated          |                     | REL-7 |
| > Charmensation Code          | IVIF |   | ((4/1)(4/4),(       |                     | NEL-/ |
|                               |      |   | 8/1)(8/8),(1        |                     |       |
|                               |      |   | 6/1)(16/16))        |                     |       |
| >>>Midamble Shift and burst   | MP   |   | Midamble            |                     | REL-7 |
| type                          | 1411 |   | shift and           |                     | \\L'  |
| 76~                           |      |   | burst type          |                     |       |
|                               |      |   | 10.3.6.41           |                     |       |
| >>>FPACH info                 | OP   |   | FPACH info          |                     | REL-7 |
| 222117(0)111110               | ] .  |   | 10.3.6.35a          |                     | `` '  |
|                               | ı    | 1   | 10.0.0.00           | l                   | 1     |

# 10.3.6.104 E-PUCH Info (TDD only)

| Information Element/Group name          | Need              | Multi             | Type and reference                      | Semantics description   | Version        |
|---|-------------------|-------------------|---|---|----------------|
| E-TFCS information                      | MP                |                   | E-TFCS info<br>10.3.6.105               | •   | REL-7          |
| CHOICE TDD mode                         |                   |                   | 10.0.0.100                              |   | REL-7          |
| >3.84/7.68 Mcps TDD                     |                   |                   |   |   | REL-7          |
| >>N <sub>E-UCCH</sub>                   | MD                |                   | Integer(112                             | No of slots that are required to carry TPC and TFCI (consecutively allocated slots beginning with the first). Default = 1 (first allocated slot). | REL-7          |
| >>E-PUCH constant value                 | MP                |                   | Integer (-<br>3510)                     | Power to be used  | REL-7          |
| >>E-PUCH TS configuration list          | MP                | <1 to<br>maxTS-2> | ,                                       |   | REL-7          |
| >>>TS number                            | MP                |                   | Integer(014                             |   | REL-7          |
| >>>CHOICE Burst Type                    | MP                |                   |   |   | REL-7          |
| >>>Type 1 >>>>Midamble allocation mode  | MP                |                   | Enumerated(<br>Default, UE<br>specific) |   | REL-7<br>REL-7 |
| >>>>Midamble configuration burst type 1 | MP                |                   | Enumerated(<br>4, 8, 16)                |   | REL-7          |
| >>>>Midambe shift                       | CV-UE<br>specific |                   | Integer(015                             |   | REL-7          |
| >>>>Type 2                              |                   |                   |   |   | REL-7          |
| >>>>Midamble allocation mode            | MP                |                   | Enumerated(<br>Default, UE<br>specific) |   | REL-7          |
| >>>>Midamble configuration burst type 2 | MP                |                   | Enumerated( 3, 6)                       |   | REL-7          |
| >>>>Midambe shift                       | CV-UE<br>specific |                   | Integer(05)                             |   | REL-7          |
| >>E-PUCH code hopping                   | MP                |                   | Boolean                                 |   | REL-7          |
| >>E-PUCH TPC step size                  | MP                |                   | Integer(1,2,3                           |   | REL-7          |
| >>Minimum allowed code rate             | MP                |                   | Integer(063                             | Maps 0.055 to 1.0 in steps of 0.015   | REL-7          |
| >>Maximum allowed code rate             | MP                |                   | Integer(063                             | Maps 0.055 to 1.0 in steps of 0.015   | REL-7          |
| >1.28 Mcps TDD                          |                   |                   |   |   | REL-7          |
| >>SNPL Reporting Type                   | OP                |                   | Enumerated (type1, type2)               |   | REL-7          |
| >>PRXdes_base                           | MP                |                   | Integer<br>(-11250 by<br>step of 1)     | dBm. Reference<br>desired power<br>level for E-PUCH   | REL-7          |
| >>Beacon PL Est.                        | MD                |                   | Boolean                                 | TRUE indicates that the UE may take into account path loss estimated from beacon function physical channels. Default value is FALSE               | REL-7          |
| >>TPC step size                         | MP                |                   | Integer (1, 2, 3)                       | dB.   | REL-7          |
| >>Pebase power control gap              | MD                |                   | Integer                                 | Unit: Number of   | REL-7          |

| (1 | , | subframes, Default value is 1. Value 255 represents infinite in which case |  |
|----|---|--|--|
|    |   | closed loop power control shall always be used.                            |  |

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| >>Uplink synchronisation                      | MD                |          |                              | Default: Uplink                     | REL-7  |
|---|-------------------|----------|------------------------------|-------------------------------------|--------|
| parameters                                    |                   |          |                              | synchronisation step size 1.        |        |
|   |                   |          |                              | Uplink                              |        |
|   |                   |          |                              | synchronisation                     |        |
| >>>Uplink synchronisation step                | MP                |          | Integer (18)                 | frequency 1. This parameter         | REL-7  |
| size  |                   |          |                              | specifies the step                  |        |
|   |                   |          |                              | size to be used for                 |        |
|   |                   |          |                              | the adjustment of the uplink        |        |
|   |                   |          |                              | transmission                        |        |
| >>>Uplink synchronisation                     | MP                |          | Integer (18)                 | timing This parameter               | REL-7  |
| frequency                                     | IVII              |          | integer (1)                  | specifies the                       | IXEL / |
|   |                   |          |                              | frequency of the                    |        |
|   |                   |          |                              | adjustment of the uplink            |        |
|   |                   |          |                              | transmission                        |        |
| >>E-PUCH TS configuration list                | MP                | <1 to    |                              | timing                              | REL-7  |
| · ·   |                   | maxTS-1> |                              |                                     |        |
| >>>TS number >>>Midamble shift and burst      | MP<br>MP          |          | Integer (15)                 |                                     | REL-7  |
| type  | IVIP              |          |                              |                                     | KEL-/  |
| >>>Midamble Allocation Mode                   | MP                |          | Enumerated                   |                                     | REL-7  |
|   |                   |          | (Default midamble,           |                                     |        |
|   |                   |          | UE specific                  |                                     |        |
|   | 145               |          | midamble)                    | A 1 (' 1: F00)                      | DE: -  |
| >>>Midamble configuration                     | MP                |          | Integer (2, 4, 6, 8, 10, 12, | As defined in [30]                  | REL-7  |
|   |                   |          | 14, 16)                      |                                     |        |
| >>>>Midamble Shift                            | CV-UE<br>specific |          | Integer<br>(015)             |                                     | REL-7  |
| >>Minimum allowed code rate                   | MP                |          | Integer<br>(063)             | Maps 0.055 to 1.0 in steps of 0.015 | REL-7  |
| >>Maximum allowed code rate                   | MP                |          | Integer<br>(063)             | Maps 0.055 to 1.0 in steps of 0.015 | REL-7  |
| >>Maximum number of                           | MP                |          | Integer                      | Only used when                      | REL-7  |
| retransmissions for Scheduling Info           |                   |          | (015)                        | no MAC-d PDUs are included in the   |        |
| 11110   |                   |          |                              | same MAC-e                          |        |
|   |                   |          |                              | PDU.                                |        |
| >>Retransmission Timer for<br>Scheduling Info | MP                |          | Enumerated (10, 15, 20,      | Only used when no MAC-d PDUs        | REL-7  |
| Scheduling IIIIO                              |                   |          | 25, 30, 35,                  | are included in the                 |        |
|   |                   |          | 40, 45, 50,                  | same MAC-e                          |        |
|   |                   |          | 55, 60, 65,<br>70, 75, 80,   | PDU. Unit is ms.                    |        |
|   |                   |          | 85, 90, 95,                  |                                     |        |
|   |                   |          | 100, 110,                    |                                     |        |
|   |                   |          | 120, 140,<br>160, 200,       |                                     |        |
|   |                   |          | 240, 280,                    |                                     |        |
|   |                   |          | 320, 400,<br>480, 560)       |                                     |        |
| Power Offset for Scheduling Info              | OP                |          | Integer (06)                 | If present, this IE                 | REL-7  |
|   |                   |          |                              | should be ignored                   |        |
|   |                   |          |                              | for LCR TDD. Only used when         |        |
|   |                   |          |                              | no MACd PDUs                        |        |
|   |                   |          |                              | are included in the same MACe PDU.  |        |
|   |                   |          |                              | Unit is in dB.                      |        |
|   |                   | •        | •                            | •                                   |        |

# 10.3.6.105 E-TFCS info (TDD only)

| IE/Group Name                         | Presence | Multi    | IE Type and Reference | Semantics<br>Description          | Version |
|---------------------------------------|----------|----------|-----------------------|-----------------------------------|---------|
| Reference Beta Information QPSK list  | MP       | <1 to 8> |                       |                                   | REL-7   |
| >Reference Code Rate                  | MP       |          | Integer<br>(010)      | Unit: -<br>Range: 01<br>Step: 0.1 | REL-7   |
| >Reference Beta                       | MP       |          | Integer (-<br>1516)   | Unit range -15db<br>to +16db      | REL-7   |
| Reference Beta Information 16QAM list | MP       | <1 to 8> |                       |                                   | REL-7   |
| >Reference Code Rate                  | MP       |          | Integer<br>(010)      | Unit: -<br>Range: 01<br>Step: 0.1 | REL-7   |
| >Reference Beta                       | MP       |          | Integer<br>(-1516)    | Unit range -15db<br>to +16db      | REL-7   |

#### 10.3.6.106 E-TFC Boost Info

| Information Element/Group name | Need                      | Multi | Type and reference | Semantics description  | Version |
|--------------------------------|---------------------------|-------|--------------------|--|---------|
| E-TFCI boost                   | MP                        |       | Integer<br>(0127)  | E-TFCI<br>threshold<br>beyond which<br>boosting of E-<br>DPCCH is<br>enabled | REL-7   |
| Delta T2TP                     | CV-<br>E-TFCI<br>boost127 |       | Integer (06)       |  | REL-7   |

| Condition       | Explanation                                  |
|-----------------|--|
| E-TFCI boost127 | If E-TFCI-Boost is set to 127 this IE is not |
|                 | needed, otherwise it is mandatory.           |

## 10.3.7 Measurement Information elements

#### 10.3.7.1 Additional measurements list

| Information Element/Group name   | Need | Multi   | Type and reference                    | Semantics description |
|----------------------------------|------|---|---------------------------------------|-----------------------|
| Additional measurements          | MP   | 1 to<br><maxadditi<br>onalMeas&gt;</maxadditi<br> |                                       |                       |
| >Additional measurement identity | MP   |   | Measuremen<br>t identity<br>10.3.7.48 |                       |

#### 10.3.7.2 Cell info

Includes non-frequency related cell info used in the IE "inter-frequency cell info list" and "intra frequency cell info list".

| Information Element/Group name | Need | Multi | Type and reference               | Semantics description                      | Version |
|--------------------------------|------|-------|----------------------------------|--|---------|
| Cell individual offset         | MD   |       | Real(-1010<br>by step of<br>0.5) | In dB Default value is 0 dB Used to offset |         |

| Reference time difference to cell | OP   |                         | Reference                                  | measured quantity value If the cell from which this IE has been received is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this IE would not have been received. In chips.                                |
|-----------------------------------|------|-------------------------|--|---|
|                                   | OP . |                         | time<br>difference to<br>cell<br>10.3.7.60 | This IE is absent for serving cell. If the cell from which this IE has been received is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.                              |
| Read SFN indicator                | MP   |                         | Boolean                                    | TRUE indicates that read of SFN is requested for the target cell If the cell from which this IE has been received is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this IE would not have been received. |
| CHOICE mode                       | MP   |                         |  |   |
| >FDD >>Primary CPICH info         | OP   |                         | Primary<br>CPICH info<br>10.3.6.60         | This IE is absent only if measuring RSSI only (broadband measurement.)  |
| >>Primary CPICH Tx power          | OP   |                         | Primary<br>CPICH Tx<br>power<br>10.3.6.61  | Required if calculating pathloss.   |
| >>TX Diversity Indicator          | MP   |                         | Boolean                                    | TRUE indicates that transmit diversity is used.   |
| >TDD                              |      |                         |  |   |
| >>Primary CCPCH info              | MP   |                         | Primary<br>CCPCH info<br>10.3.6.57         |   |
| >>Primary CCPCH TX power          | OP   |                         | Primary<br>CCPCH TX<br>power<br>10.3.6.59  |   |
| >>Timeslot list                   | OP   | 1 to<br><maxts></maxts> |  | The UE shall report Timeslot ISCP values according the  |

|                                 |        |               | order of the listed                   |        |
|---------------------------------|--------|---------------|---------------------------------------|--------|
|                                 |        |               | Timeslot                              |        |
|                                 |        |               | numbers.                              |        |
|                                 |        |               | If the cell from                      |        |
|                                 |        |               | which this IE has                     |        |
|                                 |        |               | been received is                      |        |
|                                 |        |               | operating in                          |        |
|                                 |        |               | MBSFN mode as                         |        |
|                                 |        |               | indicated in                          |        |
|                                 |        |               | subclause                             |        |
|                                 |        |               | 8.1.1.6.3 the UE                      |        |
|                                 |        |               | behaviour upon                        |        |
|                                 |        |               | reception of this                     |        |
|                                 |        |               | IE is unspecified.                    |        |
| A CHOICE TOD ontion             | MD     |               | ic is unspecified.                    | DEL 4  |
| >>>CHOICE TDD option            | MP     |               |                                       | REL-4  |
| >>>>3.84 Mcps TDD               |        | _             |                                       | REL-4  |
| >>>>Timeslot number             | MP     | Integer       | Timeslot                              |        |
|                                 |        | (014)         | numbers, for                          |        |
|                                 |        |               | which the UE                          |        |
|                                 |        |               | shall report                          |        |
|                                 |        |               | Timeslot ISCP                         |        |
| >>>>Burst Type                  | MD     | Enumerated    | Use for Timeslot                      |        |
|                                 |        | (Type1,       | ISCP                                  |        |
|                                 |        | Type2)        | measurements                          |        |
|                                 |        | ,             | only. Default                         |        |
|                                 |        |               | value is "Type1"                      |        |
| >>>7.68 Mcps TDD                |        |               | , , , , , , , , , , , , , , , , , , , | REL-7  |
| >>>>Timeslot number             | MP     | Integer       | Timeslot                              | REL-7  |
|                                 | IVII   | (014)         | numbers, for                          | 1122 / |
|                                 |        | (014)         | which the UE                          |        |
|                                 |        |               |                                       |        |
|                                 |        |               | shall report                          |        |
| <u> </u>                        |        |               | Timeslot ISCP                         | 55     |
| >>>>Burst Type                  | MD     | Enumerated    | Use for Timeslot                      | REL-7  |
|                                 |        | (Type1,       | ISCP                                  |        |
|                                 |        | Type2)        | measurements                          |        |
|                                 |        |               | only. Default                         |        |
|                                 |        |               | value is "Type1"                      |        |
| >>>>1.28 Mcps TDD               |        |               |                                       | REL-4  |
| >>>>Timeslot number             | MP     | Integer       | Timeslot                              | REL-4  |
|                                 |        | (06)          | numbers, for                          |        |
|                                 |        | •             | which the UE                          |        |
|                                 |        |               | shall report                          |        |
|                                 |        |               | Timeslot ISCP                         |        |
| Cell Selection and Re-selection | CV-    | Cell          | This IE is absent                     |        |
| Info                            | BCHopt | Selection     | for the serving                       |        |
|                                 | 20000  | and Re-       | cell.                                 |        |
|                                 |        | selection for | If the cell from                      |        |
|                                 |        | SIB11/12Info  | which this IE has                     |        |
|                                 |        | 0.12, . 2     | been received is                      |        |
|                                 |        | 10.3.2.4      |                                       |        |
|                                 |        |               | operating in                          |        |
|                                 |        |               | MBSFN mode as                         |        |
|                                 |        |               | indicated in                          |        |
|                                 |        |               | subclause                             |        |
|                                 |        |               | 8.1.1.6.3 the UE                      |        |
|                                 |        |               | behaviour upon                        |        |
|                                 |        |               | reception of this                     |        |
|                                 |        |               | IE is unspecified.                    |        |
| 1                               | +      |               | -1                                    |        |

| Condition | Explanation                                  |  |  |
|-----------|--|--|--|
| BCHopt    | This IE is Optional when sent in SYSTEM      |  |  |
|           | INFORMATION, Otherwise, the IE is not needed |  |  |

# 10.3.7.3 Cell measured results

Includes non-frequency related measured results for a cell.

| Information<br>Element/Group name | Need        | Multi            | Type and reference                                      | Semantics description   | Version |
|-----------------------------------|-------------|------------------|---|---|---------|
| Cell Identity                     | OP          |                  | Cell<br>Identity<br>10.3.2.2                            |   |         |
| Cell synchronisation information  | OP          |                  | Cell<br>synchroni<br>sation<br>informatio<br>n 10.3.7.6 |   |         |
| CHOICE mode                       | MP          |                  |   |   |         |
| >FDD                              |             |                  |   |   |         |
| >>Primary CPICH info              | MP          |                  | Primary<br>CPICH<br>info<br>10.3.6.60                   |   |         |
| >>CPICH Ec/N0                     | OP          |                  | Integer(0<br>49)  | According to CPICH_Ec/No in [19] and [20]. Fourteen spare values are needed.          |         |
| >>CPICH RSCP                      | OP          |                  | Integer(0<br>91)  | According to CPICH_RSCP in [19] and [20]. Thirty-six spare values are needed.         |         |
| >>Delta <sub>CPICH</sub> RSCP     | CV-<br>RSCP |                  | Integer(-<br>51)  | If present, the actual value of CPICH RSCP = CPICH RSCP+ Deltacpich RSCP              | REL-5   |
| >>Pathloss                        | OP          |                  | Integer(46<br>158)                                      | In dB.<br>Fifteen spare values<br>are needed.   |         |
| >TDD                              |             |                  |   |   |         |
| >>Cell parameters Id              | MP          |                  | Cell<br>parameter<br>s Id<br>10.3.6.9                   |   |         |
| >>Proposed TGSN                   | OP          |                  | Integer<br>(014)  | Proposal for the next<br>TGSN   |         |
| >>Primary CCPCH<br>RSCP           | OP          |                  | Primary<br>CCPCH<br>RSCP<br>info<br>10.3.7.54           |   |         |
| >>Pathloss                        | OP          |                  | Integer(46<br>158)                                      | In dB.<br>Fifteen spare values<br>are needed.   |         |
| >>Timeslot list                   | OP          | 1 to <<br>maxTS> |   |   |         |
| >>>Timeslot ISCP                  | MP          |                  | Timeslot<br>ISCP Info<br>10.3.7.65                      | The UE shall report the Timeslot ISCP in the same order as indicated in the cell info |         |

| Condition | Explanation  |
|-----------|--|
| RSCP      | This IE is mandatory if the IE "Cell measured results" |
|           | is included in the IE "Measured Results" (i.e. not     |
|           | included in the IE "Additional Measured Results") and  |
|           | if CPICH RSCP is present and if the value of the       |
|           | CPICH RSCP is below 0. It is not needed otherwise.     |

### 10.3.7.4 Cell measurement event results

Includes non-frequency related cell reporting quantities.

| Information Element/Group | Need | Multi   | Type and   | Semantics description |
|---------------------------|------|---|------------|-----------------------|
| name                      |      |   | reference  |                       |
| CHOICE mode               | MP   |   |            |                       |
| >FDD                      |      |   |            |                       |
| >>Primary CPICH info      | MP   | 1 to  | Primary    |                       |
|                           |      | <maxcellm< td=""><td>CPICH info</td><td></td></maxcellm<> | CPICH info |                       |
|                           |      | eas>  | 10.3.6.60  |                       |
| >TDD                      |      |   |            |                       |
| >>Primary CCPCH info      | MP   | 1 to  | Primary    |                       |
|                           |      | <maxcellm< td=""><td>CCPCH info</td><td></td></maxcellm<> | CCPCH info |                       |
|                           |      | eas>  | 10.3.6.57  |                       |

#### 10.3.7.5 Cell reporting quantities

Includes non-frequency related cell reporting quantities.

For all boolean types TRUE means inclusion in the report is requested.

| Information Element/Group name                       | Need | Multi | Type and reference | Semantics description |
|--|------|-------|--------------------|-----------------------|
| Cell synchronisation information reporting indicator | MP   |       | Boolean            |                       |
| Cell Identity reporting indicator                    | MP   |       | Boolean            |                       |
| CHOICE mode  | MP   |       |                    |                       |
| >FDD   |      |       |                    |                       |
| >>CPICH Ec/N0 reporting indicator                    | MP   |       | Boolean            |                       |
| >>CPICH RSCP reporting indicator                     | MP   |       | Boolean            |                       |
| >>Pathloss reporting indicator                       | MP   |       | Boolean            |                       |
| >TDD   |      |       |                    |                       |
| >>Timeslot ISCP reporting indicator                  | MP   |       | Boolean            |                       |
| >>Proposed TGSN Reporting required                   | MP   |       | Boolean            |                       |
| >>Primary CCPCH RSCP reporting indicator             | MP   |       | Boolean            |                       |
| >>Pathloss reporting indicator                       | MP   |       | Boolean            |                       |

### 10.3.7.6 Cell synchronisation information

The IE "Cell synchronisation information" contains the OFF and Tm as defined in [7] and [8] and the four most significant bits of the difference between the 12 least significant bits of the RLC Transparent Mode COUNT-C in the UE and the SFN of the measured cell. It is notified to SRNC by Measurement Report message or Measurement Information Element in other RRC messages

| Information Element/Group name | Need | Multi | Type and reference                   | Semantics description |
|--------------------------------|------|-------|--------------------------------------|-----------------------|
| CHOICE mode                    | MP   |       |                                      |                       |
| >FDD                           |      |       |                                      |                       |
| >>COUNT-C-SFN frame difference | OP   |       |                                      |                       |
| >>>COUNT-C-SFN high            | MP   |       | Integer(038<br>40 by step of<br>256) | in frames             |
| >>>OFF                         | MP   |       | Integer(025<br>5)                    | in frames             |
| >>Tm                           | MP   |       | Integer(038<br>399)                  | in chips              |
| >TDD                           |      |       |                                      |                       |
| >>COUNT-C-SFN frame difference | OP   |       |                                      |                       |
| >>>COUNT-C-SFN high            | MP   |       | Integer(038<br>40 by step of<br>256) | in frames             |
| >>>OFF                         | MP   |       | Integer(025<br>5)                    | in frames             |

## 10.3.7.7 Event results

| Information Element/Group name | Need | Multi | Type and reference | Semantics description        |
|--------------------------------|------|-------|--------------------|------------------------------|
| CHOICE event result            | MP   |       |                    | One spare value is needed.   |
| >Intra-frequency               |      |       | Intra-             |                              |
| measurement event results      |      |       | frequency          |                              |
|                                |      |       | measuremen         |                              |
|                                |      |       | t event            |                              |
|                                |      |       | results            |                              |
|                                |      |       | 10.3.7.37          |                              |
| >Inter-frequency               |      |       | Inter-             |                              |
| measurement event results      |      |       | frequency          |                              |
|                                |      |       | measuremen         |                              |
|                                |      |       | t event            |                              |
|                                |      |       | results            |                              |
| 1.4. 547                       |      |       | 10.3.7.17          | 5 10 0000 H : 1 1            |
| >Inter-RAT measurement         |      |       | Inter-RAT          | For IS-2000 results, include |
| event results                  |      |       | measuremen         | fields of the Pilot Strength |
|                                |      |       | t event            | Measurement Message from     |
|                                |      |       | results            | subclause 2.7.2.3.2.5 of     |
| T#:                            |      |       | 10.3.7.28          | TIA/EIA/IS-2000.5            |
| >Traffic volume measurement    |      |       | Traffic            |                              |
| event results                  |      |       | volume             |                              |
|                                |      |       | measuremen         |                              |
|                                |      |       | t event<br>results |                              |
|                                |      |       | 10.3.7.69          |                              |
| >Quality measurement event     |      |       | Quality            |                              |
| results                        |      |       | measuremen         |                              |
| results                        |      |       | t event            |                              |
|                                |      |       | results            |                              |
|                                |      |       | 10.3.7.57          |                              |
| >UE internal measurement       |      |       | UE internal        |                              |
| event results                  |      |       | measuremen         |                              |
|                                |      |       | t event            |                              |
|                                |      |       | results            |                              |
|                                |      |       | 10.3.7.78          |                              |
| >UE positioning measurement    |      |       | UE                 |                              |
| event results                  |      |       | positioning        |                              |
|                                |      |       | measuremen         |                              |
|                                |      |       | t event            |                              |
|                                |      |       | results            |                              |

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
|                                |      |       | 10.3.7.101         |                       |

| CHOICE event result                       | Condition under which the given event result is chosen |
|---|--|
| Intra-frequency measurement event results | If measurement type = intra-frequency measurement      |
| Inter-frequency measurement event results | If measurement type = inter-frequency measurement      |
| Inter-RAT measurement event results       | If measurement type = inter-RAT measurement            |
| Traffic volume measurement event results  | If measurement type = traffic volume measurement       |
| Quality measurement event results         | If measurement type = Quality measurement              |
| UE internal measurement event results     | If measurement type = UE internal measurement          |
| UE positioning measurement event results  | If measurement type = UE positioning measurement       |

## 10.3.7.8 FACH measurement occasion info

| Information Element/Group     | Need | Multi  | Type and    | Semantics       | Version |
|-------------------------------|------|--|-------------|-----------------|---------|
| name                          |      |  | reference   | description     |         |
| FACH Measurement occasion     | OP   |  | Integer(112 |                 |         |
| cycle length coefficient      |      |  | )           |                 |         |
| Inter-frequency FDD           | MP   |  | Boolean     | TRUE means that |         |
| measurement indicator         |      |  |             | measurements    |         |
|                               |      |  |             | are required    |         |
| Inter-frequency TDD 3.84 Mcps | MP   |  | Boolean     | TRUE means that | REL-4   |
| measurement indicator         |      |  |             | measurements    |         |
|                               |      |  |             | are required    |         |
| Inter-frequency TDD 7.68 Mcps | MP   |  | Boolean     | TRUE means that | REL-7   |
| measurement indicator         |      |  |             | measurements    |         |
|                               |      |  |             | are required    |         |
| Inter-frequency TDD 1.28 Mcps | MP   |  | Boolean     | TRUE means that | REL-4   |
| measurement indicator         |      |  |             | measurements    |         |
|                               |      |  |             | are required    |         |
| Inter-RAT measurement         | OP   | 1 to   |             |                 |         |
| indicators                    |      | <maxother< td=""><td></td><td></td><td></td></maxother<> |             |                 |         |
|                               |      | RAT>   |             |                 |         |
| >RAT type                     | MP   |  | Enumerated( |                 |         |
|                               |      |  | GSM,        |                 |         |
|                               |      |  | IS2000)     |                 |         |

## 10.3.7.9 Filter coefficient

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| Filter coefficient             | MD   |       | Integer(0, 1,<br>2, 3, 4, 5, 6,<br>7, 8, 9, 11,<br>13, 15, 17,<br>19) | Default value is 0    |

#### 10.3.7.10 HCS Cell re-selection information

| Information Element/Group | Need       | Multi | Type and       | Semantics description    |
|---------------------------|------------|-------|----------------|--------------------------|
| name                      |            |       | reference      |                          |
| Penalty_time              | MD         |       | Integer(0,     | Default value is 0 which |
|                           |            |       | 10, 20, 30,    | means = not used         |
|                           |            |       | 40, 50, 60)    | In seconds               |
| Temporary_offsets         | CV-Penalty |       |                |                          |
|                           | used       |       |                |                          |
| >Temporary_offset1        | MP         |       | Integer(3, 6,  | [dB]                     |
|                           |            |       | 9, 12, 15, 18, |                          |
|                           |            |       | 21, inf)       |                          |
| >Temporary_offset2        | CV-FDD-    |       | Integer(2, 3,  | [dB]                     |
|                           | Quality-   |       | 4, 6, 8, 10,   |                          |
|                           | Measure    |       | 12, inf)       |                          |

| Condition           | Explanation  |
|---------------------|--|
| Penalty used        | This IE is not needed if the IE "Penalty time" equals  |
|                     | "not used", else it is mandatory present.  |
| FDD-Quality-Measure | This IE is not needed if the IE "Cell selection and reselection quality measure" has the value CPICH RSCP, otherwise the IE is mandatory present. This conditional presence is implemented in ASN.1 by the use of a specific RSCP and EcN0 variant of 10.3.7.10. |

# 10.3.7.11 HCS neighbouring cell information

| Information Element/Group | Need | Multi | Type and     | Semantics description |
|---------------------------|------|-------|--------------|-----------------------|
| name                      |      |       | reference    |                       |
| HCS_PRIO                  | MD   |       | Integer (07) | Default value = 0     |
| Qhcs                      | MD   |       | Qhcs         | Default value = 0     |
|                           |      |       | 10.3.7.54a   |                       |
| HCS Cell Re-selection     | MP   |       | HCS Cell     |                       |
| Information               |      |       | Re-selection |                       |
|                           |      |       | Information  |                       |
|                           |      |       | 10.3.7.10    |                       |

# 10.3.7.12 HCS Serving cell information

| Information Element/Group | Need     | Multi | Type and      | Semantics description     |
|---------------------------|----------|-------|---------------|---------------------------|
| name                      |          |       | Reference     |                           |
| HCS_PRIO                  | MD       |       | Integer (07)  | Default value = 0         |
| Qhcs                      | MD       |       | Qhcs          | Default value = 0         |
|                           |          |       | 10.3.7.54a    |                           |
| T <sub>CRmax</sub>        | MD       |       | Enumerated(   | [s]                       |
|                           |          |       | not used, 30, | Default value is not used |
|                           |          |       | 60, 120, 180, |                           |
|                           |          |       | 240)          |                           |
| N <sub>CR</sub>           | CV-UE    |       | Integer(116   | Default value = 8         |
|                           | speed    |       | )             |                           |
|                           | detector |       |               |                           |
| T <sub>CrmaxHyst</sub>    | CV-UE    |       | Enumerated(   | [s]                       |
| -                         | speed    |       | not used, 10, |                           |
|                           | detector |       | 20, 30, 40,   |                           |
|                           |          |       | 50, 60, 70)   |                           |

| Condition         | Explanation  |
|-------------------|--|
| UE Speed detector | This IE is not needed if T <sub>Crmax</sub> equals 'not used', else it |
|                   | is mandatory present.  |

# 10.3.7.13 Inter-frequency cell info list

Contains the information for the list of measurement objects for an inter-frequency measurement.

| Information Element/Group name        | Need          | Multi                                      | Type and reference                                  | Semantics description   | Version |
|---------------------------------------|---------------|--|---|---|---------|
| CHOICE Inter-frequency cell removal   | OP            |  |   |   |         |
| >Remove all inter-frequency cells     |               |  |   | No data   |         |
| >Remove some inter-frequency cells    |               |  |   |   |         |
| >>Removed inter-frequency cells       | MP            | 1<br><maxcellm<br>eas&gt;</maxcellm<br>    |   |   |         |
| >>>Inter-frequency cell id            | MP            |  | Integer(0<br><maxcellme<br>as&gt;-1)</maxcellme<br> |   |         |
| >No inter-frequency cells removed     |               |  |   | No data   |         |
| New inter-frequency cells             | OP            | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |   |   |         |
| >Inter-frequency cell id              | MD            |  | Integer(0<br><maxcellme<br>as&gt;-1)</maxcellme<br> |   |         |
| >Frequency info                       | MD            |  | Frequency<br>info<br>10.3.6.36                      | Default value is the value of the previous "frequency info" in the list.  NOTE: The first occurre nce is then MP.                 |         |
| >Cell info                            | MP            |  | Cell info<br>10.3.7.2                               |   |         |
| >CHOICE mode specific info            | MP            |  |   |   | REL-7   |
| >>No information                      |               |  |   | No data for FDD,<br>TDD 3.84 Mcps or<br>TDD 7.68 Mcps   | REL-7   |
| >>TDD 1.28 Mcps                       |               |  |   |   | REL-7   |
| >>>Intra-SecondaryFrequency Indicator | MP            |  | Boolean   | TRUE means the inter frequency neighbour cell has a secondary frequency which is the same as the current working frequency of UE. | REL-7   |
| Cells for measurement                 | CV-<br>BCHopt | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |   |   |         |
| >Inter-frequency cell id              | MP            |  | Integer(0<br><maxcellme<br>as&gt;-1)</maxcellme<br> |   |         |

| Condition | Explanation                                |
|-----------|--|
| BCHopt    | This IE is not needed when sent in SYSTEM  |
|           | INFORMATION. Otherwise, the IE is Optional |

# 10.3.7.14 Inter-frequency event identity

| Information Element/Group      | Need | Multi | Type and                   | Semantics description        |
|--------------------------------|------|-------|----------------------------|------------------------------|
| name                           |      |       | reference                  |                              |
| Inter-frequency event identity | MP   |       | Enumerated(<br>2a, 2b, 2c, | Two spare values are needed. |
|                                |      |       | 2d, 2e, 2f)                |                              |

## 10.3.7.15 Inter-frequency measured results list

| Information Element/Group name               | Need | Multi                                      | Type and reference                      | Semantics description   |
|--|------|--|---|---|
| Inter-frequency measurement results          | OP   | 1 to<br><maxfreq></maxfreq>                |   |   |
| >Frequency info                              | MD   |  | Frequency<br>info<br>10.3.6.36          | Default value is the value of<br>the previous "frequency info"<br>in the list.<br>NOTE: The first occurrence<br>is then MP. |
| >UTRA carrier RSSI                           | OP   |  | Integer(076                             | According to UTRA_carrier_RSSI_LEV in [19] and [20]. Fifty-one spare values are needed.                                     |
| >Inter-frequency cell<br>measurement results | OP   | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |   | Only cells for which all reporting quantities are available should be included.   |
| >>Cell measured results                      | MP   |  | Cell<br>measured<br>results<br>10.3.7.3 |   |

# 10.3.7.16 Inter-frequency measurement

| Information Element/Group name                  | Need             | Multi | Type and reference   | Semantics description |
|---|------------------|-------|--|-----------------------|
| Inter-frequency measurement objects list        | MP               |       | Inter-<br>frequency<br>cell info list<br>10.3.7.13           |                       |
| Inter-frequency measurement quantity            | OP               |       | Inter-<br>frequency<br>measuremen<br>t quantity<br>10.3.7.18 |                       |
| Inter-frequency reporting quantity              | OP               |       | Inter-<br>frequency<br>reporting<br>quantity<br>10.3.7.21    |                       |
| Reporting cell status                           | CV-<br>reporting |       | Reporting cell status 10.3.7.61                              |                       |
| Measurement validity                            | ОР               |       | Measuremen<br>t validity<br>10.3.7.51                        |                       |
| Inter-frequency set update                      | OP               |       | Inter-<br>frequency<br>set update<br>10.3.7.22               |                       |
| CHOICE report criteria                          | MP               |       |  |                       |
| >Intra-frequency measurement reporting criteria |                  |       | Intra-<br>frequency<br>measuremen                            |                       |

| Information Element/Group name | Need | Multi | Type and reference | Semantics description       |
|--------------------------------|------|-------|--------------------|-----------------------------|
|                                |      |       | t reporting        |                             |
|                                |      |       | criteria           |                             |
|                                |      |       | 10.3.7.39          |                             |
| >Inter-frequency measurement   |      |       | Inter-             |                             |
| reporting criteria             |      |       | frequency          |                             |
|                                |      |       | measuremen         |                             |
|                                |      |       | t reporting        |                             |
|                                |      |       | criteria           |                             |
|                                |      |       | 10.3.7.19          |                             |
| >Periodical reporting criteria |      |       | Periodical         |                             |
|                                |      |       | reporting          |                             |
|                                |      |       | criteria           |                             |
|                                |      |       | 10.3.7.53          |                             |
| >No reporting                  |      |       |                    | (no data)                   |
|                                |      |       |                    | Chosen when this            |
|                                |      |       |                    | measurement only is used as |
|                                |      |       |                    | additional measurement to   |
|                                |      |       |                    | another measurement         |

| Condition | Explanation  |
|-----------|--|
| reporting | This IE is optional if the CHOICE "report criteria" is |
|           | equal to "periodical reporting criteria" or "No        |
|           | reporting", otherwise the IE is not needed             |

### 10.3.7.17 Inter-frequency measurement event results

This IE contains the measurement event results that are reported to UTRAN for inter-frequency measurements.

| Information Element/Group                        | Need | Multi                       | Type and  | Semantics description |
|--|------|-----------------------------|---|-----------------------|
| name   |      |                             | reference   |                       |
| Inter-frequency event identity                   | MP   |                             | Inter-<br>frequency<br>event<br>identity<br>10.3.7.14 |                       |
| Inter-frequency cells                            | OP   | 1 to<br><maxfreq></maxfreq> |   |                       |
| >Frequency info                                  | MP   |                             | Frequency<br>info<br>10.3.6.36                        |                       |
| >Non frequency related measurement event results | MP   |                             | Cell<br>measureme<br>nt event<br>results<br>10.3.7.4  |                       |

## 10.3.7.18 Inter-frequency measurement quantity

The quantity the UE shall measure in case of inter-frequency measurement. It also includes the filtering of the measurements.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
|                                | MD   |       | Telefelice         |                       |
| CHOICE reporting criteria      | MP   |       |                    |                       |
| >Intra-frequency reporting     |      |       |                    |                       |
| criteria                       |      |       |                    |                       |
| >>Intra-frequency measurement  | MP   |       | Intra-             |                       |
| quantity                       |      |       | frequency          |                       |
|                                |      |       | measuremen         |                       |
|                                |      |       | t quantity         |                       |
|                                |      |       | 10.3.7.38          |                       |

| Information Element/Group name                         | Need | Multi | Type and reference                               | Semantics description |
|--|------|-------|--|-----------------------|
| >Inter-frequency reporting criteria                    |      |       |  |                       |
| >>Filter coefficient                                   | MP   |       | Filter<br>coefficient<br>10.3.7.9                |                       |
| >>CHOICE mode  | MP   |       |  |                       |
| >>>FDD   |      |       |  |                       |
| >>>Measurement quantity for frequency quality estimate | MP   |       | Enumerated(<br>CPICH<br>Ec/N0,<br>CPICH<br>RSCP) |                       |
| >>>TDD   |      |       |  |                       |
| >>>Measurement quantity for frequency quality estimate | MP   |       | Enumerated(<br>Primary<br>CCPCH<br>RSCP)         |                       |

#### 10.3.7.19 Inter-frequency measurement reporting criteria

The triggering of the event-triggered reporting for an inter-frequency measurements. All events concerning inter-frequency measurements are labelled 2x where x is a,b,c,...

Event 2a: Change of best frequency.

Event 2b: The estimated quality of the currently used frequency is below a certain threshold **and** the estimated quality of a non-used frequency is above a certain threshold.

Event 2c: The estimated quality of a non-used frequency is above a certain threshold.

Event 2d: The estimated quality of the currently used frequency is below a certain threshold.

Event 2e: The estimated quality of a non-used frequency is below a certain threshold.

Event 2f: The estimated quality of the currently used frequency is above a certain threshold.

| Information<br>Element/Group name                | Need            | Multi   | Type and reference                                    | Semantics description   | Version |
|--|-----------------|---|---|---|---------|
| Parameters required for each event               | ОР              | 1 to<br><maxme<br>asEvent<br/>&gt;</maxme<br> |   |   |         |
| >Inter-frequency event identity                  | MP              |   | Inter-<br>frequency<br>event<br>identity<br>10.3.7.14 |   |         |
| >Threshold used frequency                        | CV-<br>clause 0 |   | Integer(-<br>1150)                                    | Ranges used depend<br>on measurement<br>quantity.<br>CPICH Ec/No -240dB<br>CPICH/Primary CCPCH<br>RSCP -11525dBm                    |         |
|  |                 |   | Integer (-<br>1200)                                   | Ranges used depend<br>on measurement<br>quantity.<br>CPICH Ec/No -240dB<br>CPICH/Primary CCPCH<br>RSCP -12025dBm                    | REL-6   |
| >Delta <sub>Threshold</sub> used frequency       | CV-<br>clause 3 |   | Integer(-<br>51)                                      | If present, the actual value of Threshold used frequency = Threshold used frequency + Delta <sub>Threshold</sub> used frequency     | REL-5   |
|  |                 |   |   | Not used in Release 6 and later   | REL-6   |
| >W used frequency                                | CV–<br>clause 2 |   | Real(0,<br>0.12.0<br>by step of<br>0.1)               |   |         |
| >Hysteresis                                      | MP              |   | Real(0,<br>0.514.5<br>by step of<br>0.5)              | In event 2a, 2b, 2c, 2d, 2e, 2f   |         |
| >Time to trigger                                 | MP              |   | Time to<br>trigger<br>10.3.7.64                       | Indicates the period of time during which the event condition has to be satisfied, before sending a Measurement Report. Time in ms. |         |
| >Reporting cell status                           | OP              |   | Reporting cell status 10.3.7.61                       |   |         |
| >Parameters required for each non-used frequency | OP              | 1 to<br><maxfre<br>q&gt;</maxfre<br>          |   | In this release, the first listed threshold and W parameter shall apply to all non-used frequencies.                                |         |

| Information                | Need   | Multi | Type and   | Semantics description               | Version |
|----------------------------|--|-------|------------|-------------------------------------|---------|
| Element/Group name         | 0) (   |       | reference  |                                     |         |
| >>Threshold non used       | CV-  |       | Integer(-  | Ranges used depend                  |         |
| frequency                  | clause 1   |       | 1150)      | on measurement                      |         |
|                            |  |       |            | quantity.<br>CPICH Ec/No -240dB     |         |
|                            |  |       |            | CPICH/Primary CCPCH                 |         |
|                            |  |       |            | RSCP -11525dBm.                     |         |
|                            |  |       |            | This IE is not needed if            |         |
|                            |  |       |            | the IE "Inter-frequency             |         |
|                            |  |       |            | event identity" is set to           |         |
|                            |  |       |            | 2a. However, it is                  |         |
|                            |  |       |            | specified to be                     |         |
|                            |  |       |            | mandatory to align with             |         |
|                            |  |       |            | the ASN.1.                          |         |
|                            |  |       | Integer (- | Ranges used depend                  | REL-6   |
|                            |  |       | 1200)      | on measurement                      |         |
|                            |  |       |            | quantity.<br>CPICH Ec/No -240dB     |         |
|                            |  |       |            | CPICH/Primary CCPCH                 |         |
|                            |  |       |            | RSCP -12025dBm                      |         |
|                            |  |       |            | This IE is not needed if            |         |
|                            |  |       |            | the IE "Inter-frequency             |         |
|                            |  |       |            | event identity" is set to 2a.       |         |
| >> DeltaThreshold non used | CV-  |       | Integer(-  | If present, the actual              | REL-5   |
| frequency                  | clause 4   |       | 51)        | value of Threshold non              |         |
|                            |  |       |            | used frequency =                    |         |
|                            |  |       |            | Threshold non used                  |         |
|                            |  |       |            | frequency +                         |         |
|                            |  |       |            | Delta <sub>Threshold</sub> non used |         |
|                            | <del>                                     </del> |       |            | Not used in Release 6               | REL-6   |
|                            |  |       |            | and later                           | NEL-0   |
|                            |  |       |            | and latel                           |         |
|                            |  |       |            |                                     |         |
| >>W non-used frequency     | CV-  |       | Real(0,    |                                     |         |
|                            | clause 1   |       | 0.12.0     |                                     |         |
|                            |  |       | by step of |                                     |         |
|                            |  |       | 0.1)       |                                     |         |

| Condition | Explanation  |
|-----------|--|
| Clause 0  | This IE is mandatory present if the IE "Inter frequency event identity" is set to 2b, 2d, or 2f, otherwise the IE is not needed.   |
| Clause 1  | This IE is mandatory present if the IE "Inter frequency event identity" is set to 2a, 2b, 2c or 2e, otherwise the IE is not needed   |
| Clause 2  | This IE is mandatory present if the IE "Inter-frequency event identity" is set to 2a, 2b, 2d or 2f, otherwise the IE is not needed.  |
| Clause 3  | This IE is optional if the IE "Inter frequency event identity" is set to 2b, 2d, or 2f. Otherwise the IE is not needed.  Note that in order to align with the ASN.1, this IE is always included when the IE "Delta <sub>Threshold non used frequency"</sub> is present, but the value shall be ignored if the "Inter-frequency event identity" is not set to 2b, 2d or 2f. |
| Clause 4  | This IE is optional if the IE "Inter frequency event identity" is set to 2a, 2b, 2c or 2e. Otherwise the IE is not needed.   |

## 10.3.7.20 Inter-frequency measurement system information

| Information Element/Group name             | Need | Multi | Type and reference  | Semantics description | Version |
|--|------|-------|---|-----------------------|---------|
| Inter-frequency cell info list             | OP   |       | Inter-<br>frequency<br>cell info list<br>10.3.7.13                    |                       |         |
| Inter-frequency RACH reporting information | OP   |       | Inter-<br>frequency<br>RACH<br>reporting<br>information<br>10.3.7.20a |                       | REL-6   |

## 10.3.7.20a Inter-frequency RACH reporting information

Contains the reporting configuration information for an inter-frequency measurement report, which is sent on the RACH.

| Information Element/Group name                         | Need | Multi  | Type and reference                        | Semantics description  | Version |
|--|------|--------|---|--|---------|
| CHOICE mode  | MP   |        |   |  | REL-6   |
| >FDD   |      |        |   |  | REL-6   |
| >> Inter-frequency RACH reporting quantity             | MP   |        | Enumerated(CPICH<br>Ec/N0, CPICH<br>RSCP) |  | REL-6   |
| >TDD   |      |        |   |  | REL-6   |
| >>Reporting quantity list                              | MP   | 1 to 2 |   |  | REL-6   |
| >>> Inter-frequency RACH reporting quantity            | MP   |        | Enumerated(Primary CCPCH RSCP)            |  | REL-6   |
| Inter-frequency RACH reporting threshold               | MP   |        | Integer(-1150)                            | Ranges used depend on measurement quantity. CPICH Ec/No - 240dB CPICH/Primary CCPCH RSCP - 11525dBm. | REL-6   |
| Maximum number of inter-frequency RACH reporting cells | MP   |        | Integer(18)                               | Indicates the total<br>number for all non-<br>used frequencies                                       | REL-6   |

## 10.3.7.21 Inter-frequency reporting quantity

| Information Element/Group name                  | Need | Multi | Type and reference                 | Semantics description  |
|---|------|-------|------------------------------------|--|
| UTRA Carrier RSSI                               | MP   |       | Boolean                            | TRUE means report is requested.  |
| Frequency quality estimate                      | MP   |       | Boolean                            | TRUE means that report is requested. This parameter is not used in this release and should be set to FALSE. It shall be ignored by the UE. |
| Non frequency related cell reporting quantities | MP   |       | Cell reporting quantities 10.3.7.5 |  |

# 10.3.7.22 Inter-frequency SET UPDATE

NOTE 1: Only for FDD.

This information makes it possible to use events defined for Intra-frequency measurement within the same non-used frequency for Inter-frequency measurement reporting criteria.

| Information Element/group | Need | Multi | Type and                                | Semantics description   |
|---------------------------|------|-------|---|---|
| name                      |      |       | reference                               |   |
| UE autonomous update mode | MP   |       | Enumerated<br>(On with no<br>reporting) | Required for backwards compatibility with a UE not supporting this revision of the standard |

#### 10.3.7.23 Inter-RAT cell info list

Contains the information for the list of measurement objects for an inter-RAT measurement.

| Information Element/Group name              | Need | Multi                                      | Type and reference   | Semantics description   | Version |
|---|------|--|--|---|---------|
| CHOICE Inter-RAT cell removal               | MP   |  |  |   |         |
| >Remove all inter-RAT cells                 |      |  |  | (no data)   |         |
| >Remove some inter-RAT cells                |      |  |  | (   |         |
| >>Removed inter-RAT cells                   | MP   | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |  |   |         |
| >>>Inter-RAT cell id                        | MP   |  | Integer(0<br><maxcellme as=""> - 1)</maxcellme>                            |   |         |
| >Remove no inter-RAT cells                  |      |  |  | (no data)   |         |
| New inter-RAT cells                         | MP   | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |  | Although this IE is<br>not always<br>required, need is<br>MP to align with<br>ASN.1 |         |
|   | OP   |  |  |   | REL-4   |
| >Inter-RAT cell id                          | OP   |  | Integer(0<br><maxcellme<br>as&gt; - 1)</maxcellme<br>                      |   |         |
| >CHOICE Radio Access<br>Technology          | MP   |  | ,  |   |         |
| >>GSM                                       |      |  |  |   |         |
| >>>Cell individual offset                   | MP   |  | Integer (-<br>5050 )   | In dB Used to offset measured quantity value  |         |
| >>>Cell selection and re-<br>selection info | OP   |  | Cell<br>selection<br>and re-<br>selection info<br>for SIB11/12<br>10.3.2.4 | See subclause<br>8.6.7.3  |         |
| >>>BSIC                                     | MP   |  | BSIC<br>10.3.8.2   |   |         |
| >>>Band indicator                           | MP   |  | Enumerated<br>(DCS 1800<br>band used,<br>PCS 1900<br>band used)            | Indicates how to interpret the BCCH ARFCN   |         |
| >>>BCCH ARFCN                               | MP   |  | Integer<br>(01023)   | [45]  |         |
| >>IS-2000                                   |      |  | ,  |   |         |
| >>>System specific measurement info         | MP   |  | enumerated<br>(frequency,<br>timeslot,                                     | For IS-2000, use<br>fields from<br>TIA/EIA/IS-                                      |         |

| Information Element/Group      | Need                   | Multi                                      | Type and                                       | Semantics   | Version |
|--------------------------------|------------------------|--|--|---|---------|
| name                           |                        |  | reference                                      | description   |         |
|                                |                        |  | colour code,<br>output<br>power, PN<br>offset) | 2000.5,<br>subclause 3.<br>7.3.3.2.27,<br>Candidate<br>Frequency<br>Neighbour List<br>Message   |         |
| >>None                         |                        |  | (no data)                                      | This value has been introduced to handle the case when IE "New inter-RAT cells" is not required |         |
| Cell for measurement           | OP                     | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |  |   |         |
| >Inter-RAT cell id             | MP                     |  | Integer(0<br><maxcellme as="">-1)</maxcellme>  |   |         |
| Inter-RAT cell info indication | CV-<br><i>M</i> essage |  | Integer (03)                                   | NOTE 1 and 2  | REL-5   |

| Condition | Explanation   |
|-----------|---|
| Message   | The IE is optionally present in the MEASUREMENT CONTROL and in the SRNS RELOCATION INFO messages, otherwise the IE is not needed. |

- NOTE 1: The UTRAN may choose not to use the "Inter-RAT cell info indication" value "0" in the MEASUREMENT CONTROL message, to distinguish that case from those cases where the UE receives the IE "Inter-RAT cell info list" in SIB11 or SIB12.
- NOTE 2: In case of an SRNS relocation, if the UE has been sent the "Inter-RAT cell info indication" in the MEASUREMENT CONTROL message and the IE "Inter-RAT cell info list" is included in the SRNS RELOCATION INFO sent from the source RNC to the target RNC, the "Inter-RAT cell info indication" should be included in the IE "Inter-RAT cell info list".
- NOTE 3: If the UTRAN configures a UE with a "Inter-RAT cell info list" containing a set of GSM cells where one or more cell(s) belong to DCS 1800 band and one or more cell(s) belong to PCS 1900 band, the UE behaviour is unspecified.

### 10.3.7.24 Inter-RAT event identity

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Inter-RAT event identity       | MP   |       | Enumerated         |                       |
|                                |      |       | (3a, 3b, 3c,       |                       |
|                                |      |       | 3d)                |                       |

#### 10.3.7.25 Inter-RAT info

Inter-RAT info defines the target system for redirected cell selection.

| Information Element/Group | Need   | Multi | Type and   | Semantics   | Version |
|---------------------------|--------|-------|------------|-------------|---------|
| name                      |        |       | reference  | description |         |
| Inter-RAT info            | MP     |       | Enumerated |             |         |
|                           |        |       | (GSM)      |             |         |
| GSM target cell info      | CV-GSM |       | GSM target |             | REL-6   |
|                           |        |       | cell info  |             |         |
|                           |        |       | 10.3.8.4g  |             |         |

| Condition | Explanation  |
|-----------|--|
| GSM       | This IE is optional if the IE "Inter-RAT info" is set to |
|           | 'GSM' and not needed otherwise.                          |

#### 10.3.7.26 Inter-RAT measured results list

| Information Element/Group name | Need | Multi  | Type and reference                | Semantics description   |
|--------------------------------|------|--|-----------------------------------|---|
| Inter-RAT measurement results  | OP   | 1 to<br><maxother<br>RAT-16&gt;</maxother<br>          |                                   |   |
| >CHOICE system                 | MP   |  |                                   | One spare value is needed.  |
| >>GSM                          |      |  |                                   |   |
| >>>Measured GSM cells          | MP   | 1 to<br><maxrepo<br>rtedGSMC<br/>ells&gt;</maxrepo<br> |                                   |   |
| >>>>GSM carrier RSSI           | OP   |  | bit string(6)                     | RXLEV is mapped to a value between 0 and 63, [46]. When mapping the RXLEV value to the RSSI bit string, the first/leftmost bit of the bit string contains the most significant bit. |
| >>>>CHOICE BSIC                | MP   |  |                                   |   |
| >>>>Verified BSIC              |      |  |                                   |   |
| >>>>>inter-RAT cell id         | MP   |  | Integer(0<<br>maxCellMea<br>s>-1) |   |
| >>>>Non verified BSIC          |      |  |                                   |   |
| >>>>BCCH ARFCN                 | MP   |  | Integer<br>(01023)                | [45]  |

#### 10.3.7.27 Inter-RAT measurement

| Information Element/Group name | Need      | Multi | Type and reference | Semantics description       |
|--------------------------------|-----------|-------|--------------------|-----------------------------|
| Inter-RAT measurement objects  | OP        |       | Inter-RAT          |                             |
| list                           |           |       | cell info list     |                             |
|                                |           |       | 10.3.7.23          |                             |
| Inter-RAT measurement          | OP        |       | Inter-RAT          |                             |
| quantity                       |           |       | measuremen         |                             |
|                                |           |       | t quantity         |                             |
|                                |           |       | 10.3.7.29          |                             |
| Inter-RAT reporting quantity   | OP        |       | Inter-RAT          |                             |
|                                |           |       | reporting          |                             |
|                                |           |       | quantity           |                             |
|                                |           |       | 10.3.7.32          |                             |
| Reporting cell status          | CV-       |       | Reporting          |                             |
|                                | reporting |       | cell status        |                             |
|                                |           |       | 10.3.7.61          |                             |
| CHOICE report criteria         | MP        |       |                    |                             |
| >Inter-RAT measurement         |           |       | Inter-RAT          |                             |
| reporting criteria             |           |       | measuremen         |                             |
|                                |           |       | t reporting        |                             |
|                                |           |       | criteria           |                             |
|                                |           |       | 10.3.7.30          |                             |
| >Periodical reporting criteria |           |       | Periodical         |                             |
|                                |           |       | reporting          |                             |
|                                |           |       | criteria           |                             |
|                                |           |       | 10.3.7.53          |                             |
| >No reporting                  |           |       |                    | (no data)                   |
|                                |           |       |                    | Chosen when this            |
|                                |           |       |                    | measurement only is used as |
|                                |           |       |                    | additional measurement to   |
|                                | <u> </u>  |       |                    | another measurement         |

| Condition | Explanation  |
|-----------|--|
| reporting | This IE is optional if the CHOICE "report criteria" is |
|           | equal to "periodical reporting criteria" or "No        |
|           | reporting", otherwise the IE is not needed             |

## 10.3.7.28 Inter-RAT measurement event results

This IE contains the measurement event results that are reported to UTRAN for inter-RAT measurements.

| Need | Multi   | Type and                                   | Semantics description                       |
|------|---|--|---|
|      |   | reference                                  |   |
| MP   |   | Inter-RAT                                  |   |
|      |   | event                                      |   |
|      |   | identity                                   |   |
|      |   | 10.3.7.24                                  |   |
| MP   | 1 to  |  |   |
|      | <maxcellm< td=""><td></td><td></td></maxcellm<> |  |   |
|      | eas>  |  |   |
| MP   |   |  |   |
|      |   |  |   |
| MP   |   | Integer(0<                                 |   |
|      |   | maxCellMea                                 |   |
|      |   | s>-1)                                      |   |
|      |   |  |   |
| MP   |   | Integer                                    | [45]  |
|      | MP MP MP  | MP 1 to <maxcellm eas=""> MP MP</maxcellm> | MP Integer(0 <maxcellmeas>-1)</maxcellmeas> |

### 10.3.7.29 Inter-RAT measurement quantity

The quantity the UE shall measure in case of inter-RAT measurement. It also includes the filtering of the measurements.

| Information Element/Group name                  | Need | Multi | Type and reference   | Semantics description  |
|---|------|-------|--|--|
| Measurement quantity for UTRAN quality estimate | OP   |       | Intra-<br>frequency<br>measuremen<br>t quantity<br>10.3.7.38 |  |
| CHOICE system                                   | MP   |       | 10.017.00  |  |
| >GSM  |      |       |  |  |
| >>Measurement quantity                          | MP   |       | Enumerated(<br>GSM Carrier<br>RSSI)                          |  |
| >>Filter coefficient                            | MP   |       | Filter coefficient 10.3.7.9                                  |  |
| >>BSIC verification required                    | MP   |       | Enumerated(<br>required, not<br>required)                    |  |
| >IS2000   |      |       |  |  |
| >>TADD E <sub>0</sub> /I <sub>0</sub>           | MP   |       | Integer(063  | Admission criteria for<br>neighbours, see subclause<br>2.6.6.2.6 of TIA/EIA/IS-2000.5                    |
| >>TCOMP E <sub>0</sub> /I <sub>0</sub>          | MP   |       | Integer(015  | Admission criteria for<br>neighbours, see subclause<br>2.6.6.2.5.2 of TIA/EIA/IS-<br>2000.5              |
| >>SOFT SLOPE                                    | OP   |       | Integer(063  | Admission criteria for<br>neighbours, see subclause<br>2.6.6.2.3 and 2.6.6.2.5.2 of<br>TIA/EIA/IS-2000.5 |
| >>ADD_INTERCEPT                                 | OP   |       | Integer(063  | Admission criteria for<br>neighbours, see subclause<br>2.6.6.2.5.2 of TIA/EIA/IS-<br>2000.5              |

#### 10.3.7.30 Inter-RAT measurement reporting criteria

The triggering of the event-triggered reporting for an inter-RAT measurement. All events concerning inter-RAT measurements are labelled 3x where x is a,b,c, ...

Event 3a: The estimated quality of the currently used UTRAN frequency is below a certain threshold **and** the estimated quality of the other system is above a certain threshold.

Event 3b: The estimated quality of other system is below a certain threshold.

Event 3c: The estimated quality of other system is above a certain threshold.

Event 3d: Change of best cell in other system.

| Information Element/Group name     | Need           | Multi   | Type and reference                          | Semantics description   |
|------------------------------------|----------------|---|---|---|
| Parameters required for each event | OP             | 1 to<br><maxmeas< td=""><td>10.01.01</td><td></td></maxmeas<> | 10.01.01                                    |   |
| >Inter-RAT event identity          | MP             | Event>  | Inter-RAT<br>event<br>identity<br>10.3.7.24 |   |
| >Threshold own system              | CV-clause<br>0 |   | Integer (-<br>1150)                         |   |
| >W                                 | CV-clause<br>0 |   | Real(0,<br>0.12.0 by<br>step of 0.1)        | In event 3a   |
| >Threshold other system            | CV-clause<br>1 |   | Integer (-<br>1150)                         | In event 3a, 3b, 3c   |
| >Hysteresis                        | MP             |   | Real(07.5<br>by step of<br>0.5)             |   |
| >Time to trigger                   | MP             |   | Time to<br>trigger<br>10.3.7.64             | Indicates the period of time during which the event condition has to be satisfied, before sending a Measurement Report. |
| >Reporting cell status             | OP             |   | Reporting cell status 10.3.7.61             |   |

| Condition | Explanation   |
|-----------|---|
| Clause 0  | The IE is mandatory present if the IE "Inter-RAT event    |
|           | identity" is set to "3a", otherwise the IE is not needed  |
| Clause 1  | The IE is mandatory present if the IE "Inter-RAT event    |
|           | identity" is set to 3a, 3b or 3c, otherwise the IE is not |
|           | needed  |

# 10.3.7.31 Inter-RAT measurement system information

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Inter-RAT cell info list       | OP   |       | Inter-RAT          |                       |
|                                |      |       | cell info list     |                       |
|                                |      |       | 10.3.7.23          |                       |

# 10.3.7.32 Inter-RAT reporting quantity

For all boolean types TRUE means inclusion in the report is requested.

| Information Element/Group name         | Need | Multi | Type and reference | Semantics description  |
|--|------|-------|--------------------|--|
| UTRAN estimated quality                | MP   |       | Boolean            | This parameter is not used in this release and should be set to FALSE. |
| CHOICE system                          | MP   |       |                    |  |
| >GSM                                   |      |       |                    |  |
| >>GSM Carrier RSSI Reporting indicator | MP   |       | Boolean            |  |

# 10.3.7.33 Intra-frequency cell info list

Contains the information for the list of measurement objects for an intra-frequency measurement.

| Information Element/Group name      | Need          | Multi                                     | Type and reference                                     | Semantics description   |
|-------------------------------------|---------------|---|--|---|
| CHOICE Intra-frequency cell removal | OP            |   |  | Absence of this IE is equivalent to choice "Remove no intra-frequency cells".   |
| >Remove all intra-frequency cells   |               |   |  | (no data)   |
| >Remove some intra-frequency cells  |               |   |  |   |
| >>Removed intra-frequency cells     | MP            | 1 to<br><maxcell<br>Meas&gt;</maxcell<br> |  |   |
| >>>Intra-frequency cell id          | MP            |   | Integer(0<br><maxcellmea<br>s&gt; - 1)</maxcellmea<br> |   |
| >Remove no intra-frequency cells    |               |   |  | (no data)   |
| New intra-frequency cells           | OP            | 1 to<br><maxcell<br>Meas&gt;</maxcell<br> |  | This information element must<br>be present when "Intra-<br>frequency cell info list" is<br>included in the system<br>information           |
| >Intra-frequency cell id            | OP            |   | Integer(0<br><maxcellmea<br>s&gt; - 1)</maxcellmea<br> |   |
| >Cell info                          | MP            |   | Cell info<br>10.3.7.2                                  | This IE must be included for the serving cell when the IE "Intra frequency cell info list" is included in System Information Block type 11. |
| Cells for measurement               | CV-<br>BCHopt | 1 to<br><maxcell<br>Meas&gt;</maxcell<br> |  |   |
| >Intra-frequency cell id            | MP            |   | Integer(0<br><maxcellmea<br>s&gt;-1)</maxcellmea<br>   |   |

| Condition | Explanation                                |  |  |
|-----------|--|--|--|
| BCHopt    | This IE is not needed when sent in SYSTEM  |  |  |
|           | INFORMATION. Otherwise, the IE is Optional |  |  |

# 10.3.7.34 Intra-frequency event identity

| Information Element/Group      | Need | Multi | Type and      | Semantics                    | Version |
|--------------------------------|------|-------|---------------|------------------------------|---------|
| name                           |      |       | reference     | description                  |         |
| Intra-frequency event identity | MP   |       | Enumerated    | Seven spare values           |         |
|                                |      |       | (1a,1b,1c,1d, | are needed.                  |         |
|                                |      |       | 1e,1f,1g,1h,1 |                              |         |
|                                |      |       | i,            |                              |         |
|                                |      |       | 1j)           | Six spare values are needed. | REL-6   |

# 10.3.7.35 Intra-frequency measured results list

| Information Element/Group           | Need | Multi                                      | Type and                                | Semantics description   |
|-------------------------------------|------|--|---|---|
| name                                |      |  | reference                               |   |
| Intra-frequency measurement results | OP   | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |   |   |
| >Cell measured results              | MP   |  | Cell<br>measured<br>results<br>10.3.7.3 | Only cells for which all reporting quantities are available should be included. |

## 10.3.7.36 Intra-frequency measurement

| Information Element/Group                       | Need             | Multi | Type and  | Semantics  | Version        |
|---|------------------|-------|---|--|----------------|
| name  |                  |       | reference   | description  |                |
| Intra-frequency measurement objects list        | OP               |       | Intra-<br>frequency<br>cell info list<br>10.3.7.33                        |  |                |
| Intra-frequency measurement quantity            | OP               |       | Intra-<br>frequency<br>measuremen<br>t quantity<br>10.3.7.38              |  |                |
| Intra-frequency reporting quantity              | ОР               |       | Intra-<br>frequency<br>reporting<br>quantity<br>10.3.7.41                 |  |                |
| Reporting cell status                           | CV-<br>reporting |       | Reporting cell status 10.3.7.61   |  |                |
| Measurement validity                            | OP               |       | Measuremen<br>t validity<br>10.3.7.51                                     |  |                |
| CHOICE report criteria                          | OP<br>MP<br>OP   |       |   | NOTE 1   | REL-6<br>REL-7 |
| >Intra-frequency measurement reporting criteria |                  |       | Intra-<br>frequency<br>measuremen<br>t reporting<br>criteria<br>10.3.7.39 |  |                |
| >Periodical reporting criteria                  |                  |       | Periodical reporting criteria 10.3.7.53                                   |  |                |
| >No reporting                                   |                  |       |   | (no data) Chosen when this measurement only is used as additional measurement to another measurement |                |

| Condition | Explanation  |
|-----------|--|
| reporting | This IE is optional if the CHOICE "report criteria" is |
|           | equal to "periodical reporting criteria" or "No        |
|           | reporting", otherwise the IE is not needed             |

NOTE 1: The IE "report criteria" is optional in all releases except Rel-6. In Rel-6 the IE "report criteria" is mandatory present in order to align the tabular format with the Rel-6 ASN.1.

#### 10.3.7.37 Intra-frequency measurement event results

This IE contains the measurement event results that are reported to UTRAN for intra-frequency measurements.

| Information Element/Group name | Need | Multi | Type and reference                                    | Semantics description |
|--------------------------------|------|-------|---|-----------------------|
| Intra-frequency event identity | MP   |       | Intra-<br>frequency<br>event<br>identity<br>10.3.7.34 |                       |
| Cell measurement event results | MP   |       | Cell<br>measureme<br>nt event<br>results<br>10.3.7.4  |                       |

### 10.3.7.38 Intra-frequency measurement quantity

The quantity the UE shall measure in case of intra-frequency measurement. It also includes the filtering of the measurements.

| Need | Multi  | Type and           | Semantics description                |
|------|--------|--------------------|--------------------------------------|
|      |        | reference          |                                      |
| MP   |        | Filter             |                                      |
|      |        | coefficient        |                                      |
|      |        | 10.3.7.9           |                                      |
| MP   |        |                    |                                      |
|      |        |                    |                                      |
| MP   |        | Enumerated(        |                                      |
|      |        | CPICH              |                                      |
|      |        | Ec/N0,             |                                      |
|      |        | CPICH              |                                      |
|      |        | RSCP.              |                                      |
|      |        | Pathloss)          |                                      |
|      |        |                    |                                      |
| MP   | 1 to 4 |                    |                                      |
| MP   |        | Enumerated(        |                                      |
|      |        | Primary            |                                      |
|      |        | CCPCH              |                                      |
|      |        | RSCP.              |                                      |
|      |        |                    |                                      |
|      |        |                    |                                      |
|      |        |                    |                                      |
|      | MP MP  | MP MP MP MP 1 to 4 | MP   Filter   Coefficient   10.3.7.9 |

### 10.3.7.39 Intra-frequency measurement reporting criteria

The triggering of the event-triggered reporting for an intra-frequency measurement. All events concerning intra-frequency measurements are labelled 1x where x is a, b, c....

Event 1a: A Primary CPICH enters the Reporting Range (FDD only).

Event 1b: A Primary CPICH leaves the Reporting Range (FDD only).

Event 1c: A Non-active Primary CPICH becomes better than an active Primary CPICH (FDD only).

Event 1d: Change of best cell (FDD only).

Event 1e: A Primary CPICH becomes better than an absolute threshold (FDD only).

Event 1f: A Primary CPICH becomes worse than an absolute threshold (FDD only).

Event 1g: Change of best cell in TDD.

Event 1h: Timeslot ISCP below a certain threshold (TDD only).

Event 1i: Timeslot ISCP above a certain threshold (TDD only).

Event 1j: A Non-active E-DCH but active DCH Primary CPICH becomes better than an active E-DCH Primary CPICH (FDD only).

| Information<br>Element/Group name             | Need                                   | Multi                                    | Type and reference   | Semantics description                       | Version |
|---|--|--|--|---|---------|
| Parameters required for each event            | OP                                     | 1 to<br><maxme<br>asEvent</maxme<br>     |  |   |         |
| >Intra-frequency event identity               | MP                                     |  | Intra-<br>frequency<br>event<br>identity<br>10.3.7.34  |   |         |
| >Triggering condition 1                       | CV–<br>clause 0                        |  | Enumerat<br>ed(Active<br>set cells,<br>Monitored<br>set cells,<br>Active set<br>cells and<br>monitored<br>set cells)   | Indicates which cells can trigger the event |         |
| >Triggering condition 2                       | CV-<br>clause 6<br>CV-<br>clause<br>10 |  | Enumerat ed(Active set cells, Monitored set cells, Active set cells and monitored set cells, Detected set cells, Detected set cells and monitored set cells and set cells and monitored set cells) | Indicates which cells can trigger the event | REL-5   |
| >Reporting Range<br>Constant                  | CV–<br>clause 2                        |  | Real(01<br>4.5 by<br>step of<br>0.5)   | In dB. In event 1a,1b.                      |         |
| >Cells forbidden to affect<br>Reporting range | CV–<br>clause 1                        | 1 to<br><maxcel<br>IMeas&gt;</maxcel<br> | ,  | In event 1a,1b                              |         |
| >>CHOICE mode                                 | MP                                     |  |  |   |         |
| >>>FDD >>>Primary CPICH info                  | MP                                     |  | Primary<br>CPICH<br>info<br>10.3.6.60  |   |         |
| >>>TDD  |  |  | 5.   |   |         |
| >>>Primary CCPCH info                         | MP                                     |  | Primary<br>CCPCH<br>info<br>10.3.6.57  |   |         |
| >W  | CV–<br>clause 2                        |  | Real(0.0<br>2.0 by<br>step of<br>0.1)  |   |         |
| >Hysteresis                                   | MP                                     |  | Real(07.   | In dB.                                      |         |

| Information<br>Element/Group name          | Need            | Multi | Type and reference                                    | Semantics description   | Version |
|--|-----------------|-------|---|---|---------|
|  |                 |       | 5 by step<br>of 0.5)                                  |   |         |
| >Threshold used frequency                  | CV-<br>clause 3 |       | Integer<br>(-<br>115165)                              | Range used depend on<br>measurement quantity.<br>CPICH RSCP -11525<br>dBm<br>CPICH Ec/No -240 dB<br>Pathloss 30165dB<br>ISCP -11525 dBm   |         |
|  |                 |       | Integer (-<br>120165)                                 | Range used depend on<br>measurement quantity.<br>CPICH RSCP -12025<br>dBm<br>CPICH Ec/No -240 dB<br>Pathloss 30165dB<br>ISCP -12025 dBm   | REL-6   |
| >Delta <sub>Threshold</sub> used frequency | CV-<br>clause 8 |       | Integer(-<br>51)                                      | If present, the actual value of Threshold used frequency = Threshold used frequency + Delta <sub>Threshold</sub> used frequency  Not used in Release 6 and later                            | REL-5   |
| >Reporting deactivation threshold          | CV–<br>clause 4 |       | Integer(0,<br>1, 2, 3, 4,<br>5, 6, 7)                 | In event 1a Indicates the maximum number of cells allowed in the active set in order for event 1a to occur. 0 means not applicable  |         |
| >Replacement activation threshold          | CV-<br>clause 5 |       | Integer(0, 1, 2, 3, 4, 5, 6, 7)                       | In event 1c Indicates the minimum number of cells allowed in the active set in order for event 1c to occur. 0 means not applicable  |         |
|  |                 |       |   | In event 1j Indicates the minimum number of cells allowed in the E-DCH active set in order for event 1j to occur. For event 1j values 5, 6 and 7 are not applicable. 0 means not applicable | REL-6   |
| >Time to trigger                           | MP              |       | Time to<br>trigger<br>10.3.7.64                       | Indicates the period of time during which the event condition has to be satisfied, before sending a Measurement Report. Time in ms  |         |
| >Amount of reporting                       | CV-<br>clause 7 |       | Integer(1,<br>2, 4, 8,<br>16, 32,<br>64,<br>Infinity) | In case the IE "Intra-<br>frequency reporting<br>criteria" is included in<br>the IE "Inter-frequency<br>measurement", this IE<br>is not needed.   |         |

| Information                          | Need                | Multi | Type and  | Semantics description  | Version |
|--------------------------------------|---------------------|-------|---|--|---------|
| Element/Group name                   |                     |       | reference   |  |         |
| >Reporting interval                  | CV–<br>clause 7     |       | Integer(0,<br>250, 500,<br>1000,<br>2000,<br>4000,<br>8000,<br>16000) | Indicates the interval of periodical reporting when such reporting is triggered by an event. Interval in milliseconds. O means no periodical reporting. In case the IE "Intra-frequency reporting criteria" is included in the IE "Interfrequency measurement", this IE is not needed. |         |
| >Reporting cell status               | OP                  |       | Reporting cell status 10.3.7.61                                       |  |         |
| >Periodical reporting information-1b | CV-<br>clause 9     |       | Periodical<br>reporting<br>info-1b<br>10.3.7.53<br>aa                 | In case the IE "Intra-<br>frequency reporting<br>criteria" is included in<br>the IE "Inter-frequency<br>measurement", this IE<br>is not needed.  | REL-5   |
| >Use CIO                             | CV-<br>clause<br>10 |       | Boolean   | TRUE indicates that the cell individual offset shall be used for event evaluation  | REL-5   |

| Condition | Explanation  |
|-----------|--|
| Clause 0  | The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1b" or "1f", otherwise the IE is not needed.               |
| Clause 1  | The IE is optional if the IE "Intra-frequency event identity" is set to "1a" or "1b", otherwise the IE is not needed.                        |
| Clause 2  | The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1a" or "1b", otherwise the IE is not needed.               |
| Clause 3  | The IE is mandatory present if the IE "Intra-frequency event identity" is set to , "1e", "1f", "1h" or "1i", otherwise the IE is not needed. |
| Clause 4  | The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1a", otherwise the IE is not needed.                       |
| Clause 5  | The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1c" or 1j, otherwise the IE is not needed.                 |
| Clause 6  | The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1a" or "1e", otherwise the IE is not needed.               |
| Clause 7  | The IE is mandatory present if the IE "Intra-frequency event identity" is set to "1a", "1c" or 1j, otherwise the IE is not needed.           |
| Clause 8  | The IE is optional if the IE "Intra-frequency event identity" is set to "1e", "1f", "1h" or "1i". Otherwise the IE is not needed.            |
| Clause 9  | The IE is optional if the IE "Intra-frequency event identity" is set to "1b", otherwise the IE is not needed.                                |
| Clause 10 | The IE is optional if the IE "Intra-frequency event identity" is set to "1d", otherwise the IE is not needed.                                |

# 10.3.7.40 Intra-frequency measurement system information

| Information Element/Group name                        | Need | Multi | Type and reference   | Semantics description  |
|---|------|-------|--|--|
| Intra-frequency measurement identity                  | MD   |       | Measuremen<br>t identity<br>10.3.7.48  | The intra-frequency measurement identity has default value 1.  If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified. |
| Intra-frequency cell info list                        | OP   |       | Intra-<br>frequency<br>cell info list<br>10.3.7.33                                 |  |
| Intra-frequency measurement quantity                  | OP   |       | Intra-<br>frequency<br>measuremen<br>t quantity<br>10.3.7.38                       | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.  |
| Intra-frequency reporting quantity for RACH Reporting | OP   |       | Intra-<br>frequency<br>reporting<br>quantity for<br>RACH<br>Reporting<br>10.3.7.42 | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.  |
| Maximum number of reported cells on RACH              | OP   |       | Maximum<br>number of<br>reported<br>cells on<br>RACH<br>10.3.7.43                  | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.  |
| Reporting information for state CELL_DCH              | OP   |       | Reporting information for state CELL_DCH 10.3.7.62                                 | Note 1 If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.   |

NOTE 1: The reporting of intra-frequency measurements is activated when state CELL\_DCH is entered.

# 10.3.7.41 Intra-frequency reporting quantity

Contains the reporting quantity information for an intra-frequency measurement.

| Information Element/Group name               | Need | Multi | Type and reference                 | Semantics description |
|--|------|-------|------------------------------------|-----------------------|
| Reporting quantities for active set cells    | MP   |       | Cell reporting quantities 10.3.7.5 |                       |
| Reporting quantities for monitored set cells | MP   |       | Cell reporting quantities 10.3.7.5 |                       |
| Reporting quantities for detected set cells  | OP   |       | Cell reporting quantities 10.3.7.5 |                       |

# 10.3.7.42 Intra-frequency reporting quantity for RACH reporting

Contains the reporting quantity information for an intra-frequency measurement report, which is sent on the RACH.

| Information Element/Group name                       | Need | Multi  | Type and reference  | Semantics description |
|--|------|--------|---|-----------------------|
| SFN-SFN observed time difference reporting indicator | MP   |        | Enumerated(<br>No report,<br>type 1, type<br>2)                             |                       |
| CHOICE mode  | MP   |        |   |                       |
| >FDD   |      |        |   |                       |
| >>Reporting quantity                                 | MP   |        | Enumerated(<br>CPICH<br>Ec/N0,<br>CPICH<br>RSCP,<br>Pathloss, No<br>report) |                       |
| >TDD   |      |        |   |                       |
| >>Reporting quantity list                            | MP   | 1 to 2 |   |                       |
| >>>Reporting quantity                                | MP   |        | Enumerated(<br>Timeslot<br>ISCP,<br>Primary<br>CCPCH<br>RSCP, No<br>report) |                       |

# 10.3.7.43 Maximum number of reported cells on RACH

Contains the maximum number of intra-frequency cells to be reported on RACH.

| Information Element/Group name   | Need | Multi | Type and reference   | Semantics description |
|----------------------------------|------|-------|--|-----------------------|
| Maximum number of reported cells | MP   |       | Enumerated (no report, current cell, current cell + best neighbour, current cell+2 best neighbours,, current cell+6 best |                       |

### 10.3.7.43a MBMS preferred frequency information

| Information                                 | Need | Multi  | Type and reference                              | Semantics  | Version |
|---|------|--------|---|--|---------|
| Element/Group name                          | MP   | 1 to < | reference                                       | description  | REL-6   |
| MBMS preferred frequency list               | IVIP | maxMB  |   |  | KEL-0   |
| irequericy list                             |      | MS-    |   |  |         |
|   |      | Freq>  |   |  |         |
| >MBMS preferred frequency                   | OP   | 11047  | Integer(1<br><maxmbm<br>S-Freq&gt;)</maxmbm<br> | Absence of this information element means the currently used frequency. Value n corresponds with the n <sup>th</sup> frequency included in the IE New interfrequency cells that is | REL-6   |
| 0110105 /                                   | MD   |        |   | specified within SIB 11  | DEL 0   |
| >CHOICE Layer                               | MP   |        |   |  | REL-6   |
| convergence information >> No HCS           |      |        |   |  | REL-6   |
| >>>Qoffmbms                                 | MP   |        | Enumerate                                       | The offset in decibel  | RFL-6   |
| >>> <b>Q</b> 01111101113                    | IVII |        | d (4, 8, 12,<br>16, 20, 30,<br>40, infinity)    | [dB] added to cells on<br>this MBMS preferred<br>frequency   | NEE 0   |
| >>HCS                                       |      |        |   |  | REL-6   |
| >>>HCS_OFF <sub>mbms</sub>                  | MP   |        | Integer<br>(07)                                 | Offset added to the<br>normal HCS priority<br>level of cells on this<br>MBMS preferred<br>frequency  | REL-6   |
| >MBMS PL Service<br>Restriction Information | OP   |        | Enumerate<br>d (TRUE)                           | Included if some service restrictions apply for this preferred frequency e.g. congestion   | REL-6   |

#### 10.3.7.43b MBSFN inter frequency neighbour list

| Information<br>Element/Group name    | Need | Multi                               | Type and reference             | Semantics description | Version |
|--------------------------------------|------|-------------------------------------|--------------------------------|-----------------------|---------|
| MBSFN inter frequency neighbour list | MP   | 1 to <<br>maxMB<br>SFNclu<br>sters> |                                |                       | REL-7   |
| >MBSFN frequency                     | MP   |                                     | Frequency<br>info<br>10.3.6.36 |                       | REL-7   |
| >CHOICE MBSFN services notification  | MP   |                                     |                                |                       | REL-7   |
| >>MBSFN services notified            |      |                                     |                                | (no data)             | REL-7   |
| >>MBSFN services not notified        |      |                                     |                                |                       | REL-7   |
| >>>All MBSFN services notified       | OP   |                                     | Enumerate<br>d (TRUE)          |                       | REL-7   |

## 10.3.7.44 Measured results

Contains the measured results of the quantity indicated optionally by Reporting Quantity in Measurement Control. "Measured results" can be used for both event trigger mode and periodical reporting mode. For intra-frequency and inter-frequency measurements the list shall be in the order of the value of the measurement quantity (the first cell shall be the best cell). The "best" FDD cell has the largest value when the measurement quantity is "Ec/No" or "RSCP". On the other hand, the "best" cell has the smallest value when the measurement quantity is "Pathloss". The "best" TDD cell has the largest value when measurement quantity is "Primary CCPCH RSCP". For intra-frequency measurements, the

ordering shall be applied to all cells included in the IE "Measured results". For inter-frequency measurements, the ordering shall be applied to all cells on the same frequency included in the IE "Measured results". For other measurements, the order of reported measurement objects is not specified.

| Information Element/Group name   | Need | Multi | Type and reference | Semantics description      |
|----------------------------------|------|-------|--------------------|----------------------------|
| CHOICE Measurement               | MP   |       |                    | One spare value is needed. |
| >Intra-frequency measured        |      |       | Intra-             |                            |
| results list                     |      |       | frequency          |                            |
|                                  |      |       | measured           |                            |
|                                  |      |       | results list       |                            |
|                                  |      |       | 10.3.7.35          |                            |
| >Inter-frequency measured        |      |       | Inter-             |                            |
| results list                     |      |       | frequency          |                            |
|                                  |      |       | measured           |                            |
|                                  |      |       | results list       |                            |
|                                  |      |       | 10.3.7.15          |                            |
| >Inter-RAT measured results list |      |       | Inter-RAT          |                            |
|                                  |      |       | measured           |                            |
|                                  |      |       | results list       |                            |
|                                  |      |       | 10.3.7.26          |                            |
| >Traffic volume measured         |      |       | Traffic            |                            |
| results list                     |      |       | volume             |                            |
|                                  |      |       | measured           |                            |
|                                  |      |       | results list       |                            |
|                                  |      |       | 10.3.7.67          |                            |
| >Quality measured results list   |      |       | Quality            |                            |
|                                  |      |       | measured           |                            |
|                                  |      |       | results list       |                            |
|                                  |      |       | 10.3.7.55          |                            |
| >UE Internal measured results    |      |       | UE Internal        |                            |
|                                  |      |       | measured           |                            |
|                                  |      |       | results            |                            |
|                                  |      |       | 10.3.7.76          |                            |
| >UE positioning measured         |      |       | UE                 |                            |
| results                          |      |       | positioning        |                            |
|                                  |      |       | measured           |                            |
|                                  |      |       | results            |                            |
|                                  |      |       | 10.3.7.99          |                            |

#### 10.3.7.45 Measured results on RACH

For measurements on used frequency, this IE contains the measured results on RACH of the quantity indicated by Reporting quantity in the IE "Intra-frequency reporting quantity for RACH Reporting" in system information broadcast on BCH. The list, measurement results for monitored cells (not including the current cell) shall be in the order of the value of the measurement quantity as indicated by Reporting Quantity in the IE "Intra-frequency reporting quantity for RACH Reporting" (the first cell shall be the best cell).

For measurements on non-used frequencies, this IE includes the best cell on each non-used frequency, in order of decreasing quality and up to a maximum number as specified by the IE "Maximum number of inter-frequency RACH reporting cells".

The "best" FDD cell has the largest value when the measurement quantity is "Ec/No" or "RSCP". On the other hand, the "best" cell has the smallest value when the measurement quantity is "Pathloss". The "best" TDD cell has the largest value when measurement quantity is "Primary CCPCH RSCP".

| Information Element/group | Need | Multi | Type and  | Semantics   | Version |
|---------------------------|------|-------|-----------|-------------|---------|
| name                      |      |       | reference | description |         |

| Information Element/group name                            | Need     | Multi   | Type and reference                                     | Semantics description   | Version |
|---|----------|---------|--|---|---------|
| Measurement result for current cell                       | MP       |         |  |   |         |
| >CHOICE mode  | MP       |         |  |   |         |
| >>FDD   |          |         |  | _   |         |
| >>>CHOICE measurement quantity                            | MP       |         |  | One spare value is needed.  |         |
| >>>>CPICH Ec/N0   |          |         | Integer(049  | In dB. According<br>to CPICH_Ec/No<br>in [19].<br>Fourteen spare<br>values are<br>needed. |         |
| >>>>CPICH RSCP  |          |         | Integer(091  | In dBm. According to CPICH_RSCP_LE V in [19]. Thirty-six spare values are needed.         |         |
| >>>Pathloss   |          |         | Integer(461<br>58)                                     | In dB. Fifteen spare values are needed.   |         |
| >>TDD   |          |         |  |   |         |
| >>>CHOICE TDD option                                      | MP       |         |  |   | REL-4   |
| >>>3.84 Mcps TDD  | <u> </u> | 1       |  |   | REL-4   |
| >>>>Timeslot List   | OP       | 1 to 14 | T  | T   |         |
| >>>>Timeslot ISCP   | MP       |         | Timeslot<br>ISCP info<br>10.3.7.65                     | The UE shall report the Timeslot ISCP in the same order as indicated in the cell info     |         |
| >>>7.68 Mcps TDD  |          |         |  |   | REL-7   |
| >>>>Timeslot List   | OP       | 1 to 14 |  |   | REL-7   |
| >>>>Timeslot ISCP   | MP       |         | Timeslot<br>ISCP info<br>10.3.7.65                     | The UE shall report the Timeslot ISCP in the same order as indicated in the cell info     | REL-7   |
| >>>>1.28 Mcps TDD   |          |         |  |   | REL-4   |
| >>>>Timeslot List   | OP       | 1 to 6  |  |   | REL-4   |
| >>>>>Timeslot ISCP  | MP       |         | Timeslot<br>ISCP info<br>10.3.7.65                     | The UE shall report the Timeslot ISCP in the same order as indicated in the cell info     | REL-4   |
| >>>Primary CCPCH RSCP                                     | OP       |         | Primary<br>CCPCH<br>RSCP info<br>10.3.7.54             |   |         |
| Measurement results for monitored cells on used frequency | OP       | 1 to 8  |  |   |         |
| >SFN-SFN observed time difference                         | OP       |         | SFN-SFN<br>observed<br>time<br>difference<br>10.3.7.63 |   |         |
| >CHOICE mode  | MP       |         |  |   |         |
| >>FDD   | <u> </u> |         | <del>  </del>  |   |         |
| >>>Primary CPICH info                                     | MP       |         | Primary<br>CPICH info                                  |   |         |

| Information Element/group name                                  | Need | Multi                                 | Type and reference                                  | Semantics description   | Version |
|---|------|---------------------------------------|---|---|---------|
|   |      |                                       | 10.3.6.60   | u.cccpc   |         |
| >>>CHOICE measurement quantity                                  | OP   |                                       |   | One spare value is needed.  |         |
| >>>CPICH Ec/N0  |      |                                       | Integer(049   | In dB. According<br>to CPICH_Ec/No<br>in [19].<br>Fourteen spare<br>values are<br>needed. |         |
| >>>CPICH RSCP   |      |                                       | Integer(091   | In dBm. According to CPICH_RSCP_LE V in [19]. Thirty-six spare values are needed.         |         |
| >>>Pathloss   |      |                                       | Integer(461<br>58)                                  | In dB. Fifteen spare values are needed.   |         |
| >>TDD   |      |                                       |   |   |         |
| >>>Cell parameters Id   | MP   |                                       | Cell<br>parameters<br>Id 10.3.6.9                   |   |         |
| >>>Primary CCPCH RSCP   | MP   |                                       | Primary<br>CCPCH<br>RSCP info<br>10.3.7.54          |   |         |
| Measurement results for monitored cells on non-used frequencies | OP   |                                       |   |   | REL-6   |
| >Inter-frequency cell indication-<br>SIB11                      | MP   |                                       | Integer (01)  |   | REL-6   |
| >Inter-frequency cell indication-<br>SIB12                      | MP   |                                       | Integer (01)  |   | REL-6   |
| >Inter-frequency cell list                                      | MP   | 1 to<br><maxfreq<br>&gt;</maxfreq<br> |   |   | REL-6   |
| >>Inter-frequency cell id                                       | MP   |                                       | Integer(0<br><maxcellme<br>as&gt;-1)</maxcellme<br> |   | REL-6   |

NOTE: Monitored cells consist of neighbouring cells.

## 10.3.7.46 Measurement Command

| tics description | and Sonce  | 71               | Need | Information Element/Group name |
|------------------|------------|------------------|------|--------------------------------|
|                  | ated(      | Enun<br>Setur    | MP   | Measurement command            |
|                  |            | Modif            |      |                                |
|                  | <i>i</i> ) | Modif<br>Release |      |                                |

# 10.3.7.47 Measurement control system information

| Information element/Group name                 | Need | Multi | Type and reference  | Semantics description  |
|--|------|-------|---|--|
| Use of HCS                                     | MP   |       | Enumerated<br>(Not used,<br>used)   | Indicates if the serving cell belongs to a HCS structure If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this IE would not have been received.   |
| Cell selection and reselection quality measure | MP   |       | Enumerated<br>(CPICH<br>Ec/N0,<br>CPICH<br>RSCP)                          | Choice of measurement (CPICH Ec/N0 or CPICH RSCP) to use as quality measure Q. NOTE: For TDD,each choice of this parameter represents PCCPCH RSCP.  If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaves as if this IE would not have been received |
| Intra-frequency measurement system information | OP   |       | Intra-<br>frequency<br>measuremen<br>t system<br>information<br>10.3.7.40 |  |
| Inter-frequency measurement system information | OP   |       | Inter-<br>frequency<br>measuremen<br>t system<br>information<br>10.3.7.20 | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.  |
| Inter-RAT measurement system information       | OP   |       | Inter-RAT<br>measuremen<br>t system<br>information<br>10.3.7.31           | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.  |
| Traffic volume measurement system information  | OP   |       | Traffic volume measuremen t system information 10.3.7.73                  | If the cell is operating in MBSFN mode as indicated in subclause 8.1.1.6.3 the UE behaviour upon reception of this IE is unspecified.  |

| Condition | Explanation   |
|-----------|---|
| MBSFN     | This IE is mandatory present in a cell operating in |
|           | MBSFN mode.   |

# 10.3.7.47a Measurement control system information extension

| Information element/Group name         | Need | Multi                                      | Type and reference   | Semantics description   | Version |
|--|------|--|--|---|---------|
| Intra-frequency cell info list         | OP   |  |  |   | REL-6   |
| >New intra-frequency cells             | MP   | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |  |   | REL-6   |
| >>Intra-frequency cell id              | OP   |  | Integer(0<br><maxcellme<br>as&gt; - 1)</maxcellme<br>                                    |   | REL-6   |
| >>Cell info                            | MP   |  | Cell info<br>10.3.7.2  |   | REL-6   |
| Inter-frequency cell info list         | OP   |  |  |   | REL-6   |
| >New inter-frequency cells             | MP   | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |  |   | REL-6   |
| >>Frequency Info                       | MD   |  | Frequency<br>info<br>10.3.6.36   | Default value is the value of the previous "frequency info" in the list. NOTE: The first occurrence is then MP. | REL-6   |
| >>Inter-frequency cell id              | OP   |  | Integer(0<br><maxcellme<br>as&gt; - 1)</maxcellme<br>                                    |   | REL-6   |
| >>Cell info                            | MP   |  | Cell info<br>10.3.7.2  |   | REL-6   |
| Inter-RAT cell info list               | OP   |  |  |   | REL-6   |
| >>New inter-RAT cells                  | MP   | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |  |   | REL-6   |
| >>Inter-RAT cell id                    | OP   |  | Integer(0<br><maxcellme<br>as&gt; - 1)</maxcellme<br>                                    |   | REL-6   |
| >>CHOICE Radio Access<br>Technology    | MP   |  |  |   | REL-6   |
| >>>GSM                                 |      |  |  |   | REL-6   |
| >>>Cell individual offset              | MP   |  | Integer (-<br>5050 )   | In dB Used to offset measured quantity value  | REL-6   |
| >>>Cell selection and reselection info | OP   |  | Cell<br>selection<br>and re-<br>selection info<br>for SIB11/12<br>10.3.2.4               | See subclause<br>8.6.7.3  | REL-6   |
| >>>BSIC                                | MP   |  | BSIC<br>10.3.8.2   |   | REL-6   |
| >>>Band indicator                      | MP   |  | Enumerated<br>(DCS 1800<br>band used,<br>PCS 1900<br>band used)                          | Indicates how to interpret the BCCH ARFCN   | REL-6   |
| >>>BCCH ARFCN                          | MP   |  | Integer<br>(01023)   | [45]  | REL-6   |
| >>>IS-2000                             |      |  |  |   | REL-6   |
| >>>System specific measurement info    | MP   |  | enumerated<br>(frequency,<br>timeslot,<br>colour code,<br>output<br>power, PN<br>offset) | For IS-2000, use<br>fields from<br>TIA/EIA/IS-<br>2000.5,<br>subclause 3.<br>7.3.3.2.27,<br>Candidate           | REL-6   |

|         |  |           | Frequency<br>Neighbour List<br>Message   |       |
|---------|--|-----------|--|-------|
| >>>None |  | (no data) | This value has<br>been introduced<br>to handle the case<br>when IE "New<br>inter-RAT cells" is<br>not required | REL-6 |

## 10.3.7.48 Measurement Identity

A reference number that is used by the UTRAN at modification and release of the measurement, and by the UE in the measurement report.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Measurement identity           | MP   |       | Integer(116        |                       |

## 10.3.7.49 Measurement reporting mode

Contains the type of Measurement Report transfer mode and the indication of periodical/event trigger.

| Information Element/Group name                         | Need | Multi | Type and reference  | Semantics description |
|--|------|-------|---|-----------------------|
| Measurement Report Transfer Mode                       | MP   |       | enumerated<br>(Acknowledg<br>ed mode<br>RLC,<br>Unacknowle<br>dged mode<br>RLC) |                       |
| Periodical Reporting / Event<br>Trigger Reporting Mode | MP   |       | Enumerated<br>(Periodical<br>reporting,<br>Event<br>trigger)                    |                       |

# 10.3.7.50 Measurement Type

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description |
|--------------------------------|------|-------|--|-----------------------|
| Measurement Type               | MP   |       | Enumerated( Intra- frequency, Inter- frequency, Inter-RAT, Traffic volume, Quality, UE internal, UE positioning) |                       |

## 10.3.7.51 Measurement validity

| Information Element/Group | Need | Multi | Type and    | Semantics description |
|---------------------------|------|-------|-------------|-----------------------|
| name                      |      |       | reference   |                       |
| UE state                  | MP   |       | Enumerated( |                       |
|                           |      |       | CELL_DCH,   |                       |
|                           |      |       | all states  |                       |
|                           |      |       | except      |                       |
|                           |      |       | CELL_DCH,   |                       |
|                           |      |       | all states) |                       |

10.3.7.52 Void

# 10.3.7.53 Periodical reporting criteria

Contains the periodical reporting criteria information. It is necessary only in the periodical reporting mode.

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description   |
|--------------------------------|------|-------|---|---|
| Amount of reporting            | MD   |       | Integer(1, 2,<br>4, 8, 16, 32,<br>64, Infinity)   | The default value is infinity.  |
| Reporting interval             | MP   |       | Integer(250, 500, 1000, 2000, 3000, 4000, 6000, 12000, 20000, 24000, 28000, 32000, 64000) | Indicates the interval of periodical report. Interval in milliseconds |

## 10.3.7.53aa Periodical reporting info-1b

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description  | Version |
|--------------------------------|------|-------|---|--|---------|
| Amount of reporting            | MP   |       | Integer(1,<br>2, 4, 8, 16,<br>32, 64,<br>Infinity)              |  | REL-5   |
| Reporting interval             | MP   |       | Integer(0,<br>250, 500,<br>1000, 2000,<br>4000, 8000,<br>16000) | Indicates the interval of periodical reporting when such reporting is triggered by an event. Interval in milliseconds.  0 means no periodical reporting. | REL-5   |

## 10.3.7.53a PLMN identities of neighbour cells

This IE contains the PLMN identities of neighbour cells.

| Information Element/Group      | Need | Multi   | Type and  | Semantics description |
|--------------------------------|------|---|-----------|-----------------------|
| name                           |      |   | reference |                       |
| PLMNs of intra-frequency cells | OP   | 1 to  |           |                       |
| list                           |      | <maxcellm< td=""><td></td><td></td></maxcellm<> |           |                       |
|                                |      | eas>  |           |                       |

| Information Element/Group          | Need | Multi   | Type and reference | Semantics description                             |
|------------------------------------|------|---|--------------------|---|
| name                               | OP   |   |                    | A stice when not propertie                        |
| >PLMN identity                     | OP   |   | PLMN<br>identity   | Action when not present is specified in subclause |
|                                    |      |   | 10.3.1.11          | 8.1.1.6.18.                                       |
| DI MAIs of inter-free constant and | 0.0  | 4.4-  | 10.3.1.11          | 0.1.1.0.10.                                       |
| PLMNs of inter-frequency cells     | OP   | 1 to  |                    |   |
| list                               |      | <maxcellm< td=""><td></td><td></td></maxcellm<> |                    |   |
|                                    |      | eas>  |                    |   |
| >PLMN identity                     | OP   |   | PLMN               | Action when not present is                        |
| _                                  |      |   | identity           | specified in subclause                            |
|                                    |      |   | 10.3.1.11          | 8.1.1.6.18.                                       |
| PLMNs of inter-RAT cells list      | OP   | 1 to  |                    |   |
|                                    |      | <maxcellm< td=""><td></td><td></td></maxcellm<> |                    |   |
|                                    |      | eas>  |                    |   |
| >PLMN identity                     | OP   |   | PLMN               | Action when not present is                        |
|                                    |      |   | identity           | specified in subclause                            |
|                                    |      |   | 10.3.1.11          | 8.1.1.6.18.                                       |

# 10.3.7.54 Primary CCPCH RSCP info

NOTE: Only for TDD

| Information<br>Element/Group name | Need    | Multi | IE type<br>and<br>reference | Semantics description   | Version |
|-----------------------------------|---------|-------|-----------------------------|---|---------|
| Primary CCPCH RSCP                | MP      |       | Integer(0<br>91)            | According to P-<br>CCPCH_RSCP_LEV in<br>[19] and [20].<br>Thirty-six spare values<br>are needed.  |         |
| Deltaprimary CCPCH RSCP           | CV-Rel5 |       | Integer(-<br>51)            | If present, the actual value of Primary CCPCH RSCP = Primary CCPCH RSCP+ Delta <sub>Primary</sub> | REL-5   |

| Condition | Explanation  |
|-----------|--|
| Rel5      | This IE is mandatory if the value of Primary CCPCH |
|           | RSCP is below 0. Othewise the IE is not needed.    |

## 10.3.7.54a Qhcs

| Information<br>Element/Group name | Need | Multi | Type and Referenc | Semantics description | Version |
|-----------------------------------|------|-------|-------------------|-----------------------|---------|
|                                   |      |       | е                 |                       |         |

| Information<br>Element/Group name | Need | Multi | Type and<br>Referenc<br>e | Semantics description   | Version |
|-----------------------------------|------|-------|---------------------------|---|---------|
| Qhcs                              | MP   |       | Integer(<br>099)          | Qhcs, mapped from CPICH Ec/No (FDD), see [4] [dB] 0: -24 1: -23.5 2: -23 3: -22.5 45: -1.5 46: -1 47: -0.5 48: 0 49: (spare) 98: (spare) 99: (spare)  Qhcs, mapped from CPICH RSCP (FDD), see [4] [dBm] 0: -115 1: -114 2: -113 : 88: -27 89: -26 90: -(spare) 91: -(spare) : 98: -(spare) 99: -(spare) |         |
|                                   |      |       |                           | Qhcs, mapped from PCCPCH RSCP (TDD), see [4] [dBm] 0: -115 1: -114 2: -113 : 88: -27 89: -26 90: -(spare) 91: -(spare) : 98: -(spare) 99: -(spare)  |         |

| Information<br>Element/Group name | Need        | Multi | Type and<br>Referenc<br>e | Semantics description  | Version |
|-----------------------------------|-------------|-------|---------------------------|--|---------|
|                                   |             |       |                           | Qhcs level, mapped from Averaged received signal level RSSI (GSM), see [4] [dBm] 0: -110 1: -109 2: -108 : 61: -49 62: -48 63: -47 64: -46 65: -45 66: -44 67: -43 68: -42 69: -41 70: -40 71: -39 72: -38 73: -37 74: -(spare) 99: -(spare) |         |
| Delta <sub>Qhcs-RSCP</sub>        | CV-<br>RSCP |       | Integer(-<br>51)          | If present, the actual value of Qhcs = Qhcs + Delta <sub>Qhcs-RSCP</sub>   | REL-5   |

| Condition | Explanation  |
|-----------|--|
|           | This IE is optional if Qhcs is mapped from CPICH RSCP or PCCPCH RSCP, and if the value of the RSCP is below 0 (-115dBm). It is not needed otherwise. |

# 10.3.7.55 Quality measured results list

| Information Element/Group      | Need | Multi   | Type and    | Semantics description         |
|--------------------------------|------|---|-------------|-------------------------------|
| name                           |      |   | reference   |                               |
| BLER measurement results       | OP   | 1 to  |             |                               |
|                                |      | <maxtrch< td=""><td></td><td></td></maxtrch<>       |             |                               |
|                                |      | >   |             |                               |
| >DL Transport channel identity | MP   |   | Transport   | transport channel type = DCH  |
|                                |      |   | channel     |                               |
|                                |      |   | identity    |                               |
|                                |      |   | 10.3.5.18   |                               |
| >DL Transport Channel BLER     | OP   |   | Integer     | According to BLER_LOG in      |
| -                              |      |   | (063)       | [19] and [20]                 |
| CHOICE mode                    | MP   |   |             |                               |
| >FDD                           |      |   |             | No data                       |
| >TDD                           |      |   |             |                               |
| >>SIR measurement results      | OP   | 1 to  |             | SIR measurements for DL       |
|                                |      | <maxcctr< td=""><td></td><td>CCTrCH</td></maxcctr<> |             | CCTrCH                        |
|                                |      | CH>   |             |                               |
| >>>TFCS ID                     | MP   |   | Integer(18) |                               |
| >>>Timeslot list               | MP   | 1 to  |             | for all timeslot on which the |
|                                |      | <maxts></maxts>                                     |             | CCTrCH is mapped on           |
| >>>SIR                         | MP   |   | Integer(063 | According to UE_SIR in [20]   |
|                                |      |   | )           |                               |

## 10.3.7.56 Quality measurement

| Information Element/Group name  | Need | Multi | Type and reference  | Semantics description   |
|---|------|-------|---|---|
| Quality reporting quantity  | OP   |       | Quality<br>reporting<br>quantity<br>10.3.7.59                                   |   |
| CHOICE report criteria  | MP   |       |   |   |
| >Quality measurement reporting criteria  >Periodical reporting criteria |      |       | Quality measuremen t reporting criteria 10.3.7.58 Periodical reporting criteria | Note Given this choice, the IE "DL Transport Channel BLER" shall be set to FALSE (see subclause 10.3.7.59) Note |
| >No reporting   |      |       | 10.3.7.53   | Note (no data) Chosen when this measurement only is used as additional measurement to another measurement       |

NOTE: In this version of the specification, BLER as additional measurement is not supported.

## 10.3.7.57 Quality measurement event results

| Information Element/Group name       | Need | Multi                                 | Type and reference                   | Semantics description        |
|--------------------------------------|------|---------------------------------------|--------------------------------------|------------------------------|
| Transport channels causing the event | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |                                      |                              |
| >DL Transport channel identity       | MP   |                                       | Transport channel identity 10.3.5.18 | transport channel type = DCH |

# 10.3.7.58 Quality measurement reporting criteria

Event 5a: Number of bad CRCs on a certain transport channel exceeds a threshold.

| Information Element/Group      | Need | Multi   | Type and    | Semantics description        |
|--------------------------------|------|---|-------------|------------------------------|
| name                           |      |   | reference   |                              |
| Parameters sent for each       | MP   | 1 to  |             |                              |
| transport channel              |      | <maxtrch< td=""><td></td><td></td></maxtrch<> |             |                              |
|                                |      | >   |             |                              |
| >DL Transport channel identity | MP   |   | Transport   | transport channel type = DCH |
|                                |      |   | channel     |                              |
|                                |      |   | identity    |                              |
|                                |      |   | 10.3.5.18   |                              |
| >Total CRC                     | MP   |   | Integer(151 | Number of CRCs               |
|                                |      |   | 2)          |                              |
| >Bad CRC                       | MP   |   | Integer(151 | Number of CRCs               |
|                                |      |   | 2)          |                              |
| >Pending after trigger         | MP   |   | Integer(151 | Number of CRCs               |
|                                |      |   | 2)          |                              |

### 10.3.7.59 Quality reporting quantity

| Information Element/Group             | Need                 | Multi                                   | Type and                             | Semantics description   |
|---------------------------------------|----------------------|---|--------------------------------------|---|
| name                                  |                      |   | reference                            |   |
| DL Transport Channel BLER             | MP                   |   | Boolean                              | TRUE means report requested   |
| Transport channels for BLER reporting | CV-BLER<br>reporting | 1 to<br><maxtrch<br>&gt;</maxtrch<br>   |                                      | The default, if no transport channel identities are present, is that the BLER is reported for all downlink transport channels |
| >DL Transport channel identity        | MP                   |   | Transport channel identity 10.3.5.18 | transport channel type = DCH  |
| CHOICE mode                           | MP                   |   |                                      |   |
| >FDD                                  |                      |   |                                      | No data   |
| >TDD                                  |                      |   |                                      |   |
| >>SIR measurement list                | OP                   | 1 to<br><maxcctr<br>CH&gt;</maxcctr<br> |                                      | SIR measurements shall be reported for all listed TFCS IDs  |
| >>>TFCS ID                            | MP                   |   | Integer(18)                          |   |

| Condition      | Explanation   |
|----------------|---|
| BLER reporting | This IE is not needed if the IE "DL Transport Channel BLER" is FALSE and optional if the IE "DL Transport |
|                | Channel BLER" is TRUE   |

#### 10.3.7.60 Reference time difference to cell

In the System Information message, the reference time difference to cell indicates the timing difference between the primary CCPCH of the current cell and the primary CCPCH of a neighbouring cell..

In the Measurement Control message, the reference time difference to cell indicates the timing difference between UE uplink transmission timing and the primary CCPCH of a neighbouring cell.

| Information Element/Group   | Need | Multi | Type and                               | Semantics description |
|-----------------------------|------|-------|--|-----------------------|
| name                        |      |       | reference                              |                       |
| CHOICE accuracy             | MP   |       |  |                       |
| >40 chips                   |      |       |  |                       |
| >>Reference time difference | MP   |       | Integer(038<br>400 by step<br>of 40)   | In chips              |
| >256 chips                  |      |       |  |                       |
| >>Reference time difference | MP   |       | Integer(0<br>38400 by<br>step of 256)  | In chips              |
| >2560 chips                 |      |       |  |                       |
| >>Reference time difference | MP   |       | Integer(0<br>38400 by<br>step of 2560) | In chips              |

#### 10.3.7.61 Reporting Cell Status

Indicates maximum allowed number of cells to report and whether active set cells and/or virtual active set cells and/or monitored set cells on and/or detected set cells used frequency and/or monitored set cells on non used frequency should/should not be included in the IE "Measured results".

| Information Element/Group name  | Need | Multi | Type and reference | Semantics description   |
|---------------------------------|------|-------|--------------------|---|
| CHOICE reported cell            | MP   |       |                    |   |
| >Report cells within active set |      |       |                    | This choice is not valid for inter-RAT measurements. For inter-frequency measurements |

| Information Element/Group name  | Need | Multi | Type and reference  | Semantics description  |
|---|------|-------|---|--|
|   |      |       |   | it is only valid for reporting events 2D and 2F. See NOTE 1.           |
| >>Maximum number of reported cells  | MP   |       | Integer(16)   |  |
| >Report cells within monitored set cells on used frequency                                      |      |       |   | This choice is not valid for inter-RAT or inter-frequency measurements |
| >>Maximum number of reported cells  | MP   |       | Integer(16)   |  |
| >Report cells within active set<br>and/or monitored set cells on<br>used frequency              |      |       |   | This choice is not valid for inter-RAT or inter-frequency measurements |
| >>Maximum number of reported cells  | MP   |       | Integer(16)   |  |
| >Report cells within detected set on used frequency   |      |       |   | This choice is not valid for inter-RAT or inter-frequency measurements |
| >>Maximum number of reported cells  | MP   |       | Integer(16)   |  |
| >Report cells within monitored<br>set and/or detected set on used<br>frequency                  |      |       |   | This choice is not valid for inter-RAT or inter-frequency measurements |
| >>Maximum number of reported cells  | MP   |       | Integer(16)   |  |
| >Report all active set cells + cells within monitored set on used frequency                     |      |       |   | This choice is not valid for inter-RAT or inter-frequency measurements |
| >>Maximum number of reported cells  | MP   |       | Enumerated (virtual/activ e set cells+1, virtual/active set cells+2,, virtual/active set cells+6) |  |
| >Report all active set cells + cells within detected set on used frequency                      |      |       |   | This choice is not valid for inter-RAT or inter-frequency measurements |
| >>Maximum number of reported cells  | MP   |       | Enumerated (virtual/activ e set cells+1, virtual/active set cells+2,, virtual/active set cells+6) |  |
| >Report all active set cells + cells within monitored set and/or detected set on used frequency |      |       |   | This choice is not valid for inter-RAT or inter-frequency measurements |
| >>Maximum number of reported cells  | MP   |       | Enumerated (virtual/activ e set cells+1, virtual/active set cells+2,, virtual/active set cells+6) |  |
| >Report cells within virtual active set   |      |       | ,   | This choice is not valid for intra-frequency or inter-RAT measurements |
| >>Maximum number of reported cells per reported non-used frequency                              | MP   |       | Integer(16)   |  |
| >Report cells within monitored set on non-used frequency  |      |       |   | This choice is not valid for intra-frequency or inter-RAT              |

| Information Element/Group name  | Need | Multi | Type and reference  | Semantics description  |
|---|------|-------|---|--|
|   |      |       |   | measurements   |
| >>Maximum number of reported cells per reported non-used frequency  | MP   |       | Integer(16)   |  |
| >Report cells within monitored and/or virtual active set on non-used frequency  |      |       |   | This choice is not valid for intra-frequency or inter-RAT measurements   |
| >>Maximum number of reported cells per reported non-used frequency  | MP   |       | Integer(16)   |  |
| >Report all virtual active set<br>cells + cells within monitored set<br>on non-used frequency   |      |       |   | This choice is not valid for intra-frequency or inter-RAT measurements   |
| >>Maximum number of reported cells per reported non-used frequency  | MP   |       | Enumerated (virtual/activ e set cells+1, virtual/active set cells+2,, virtual/active set cells+6) |  |
| >Report cells within active set or within virtual active set or of the other RAT  |      |       |   | If this choice is selected for inter-RAT measurements, the UE shall report only cells of the other RAT.  If this choice is selected for intra-frequency measurements, the UE shall report cells within the active set. If this choice is selected for inter-frequency measurements, the UE shall report cells within the virtual active set.         |
| >>Maximum number of reported cells  | MP   |       | Integer<br>(112)  |  |
| >Report cells within active<br>and/or monitored set on used<br>frequency or within virtual active<br>and/or monitored set on non-<br>used frequency |      |       |   | This choice is not valid for inter-RAT measurements. If this choice is selected for intra-frequency measurements, the UE shall report cells within the active and/or monitored set. If this choice is selected for inter-frequency measurements, the UE shall report cells within the virtual active set and/or monitored set on non-used frequency. |
| >>Maximum number of reported cells  | MP   |       | Integer(112   |  |

NOTE 1: For Inter-frequency reporting events 2D and 2F, only CHOICE "Report cells within active set" is valid.

# 10.3.7.62 Reporting information for state CELL\_DCH

| Information Element/Group name                  | Need | Multi | Type and reference  | Semantics description  |
|---|------|-------|---|--|
| Intra-frequency reporting quantity              | MP   |       | Intra-<br>frequency<br>reporting<br>quantity<br>10.3.7.41                 |  |
| Measurement Reporting Mode                      | MP   |       | Measuremen<br>t Reporting<br>Mode<br>10.3.7.49                            |  |
| CHOICE report criteria                          | MP   |       |   |  |
| >Intra-frequency measurement reporting criteria |      |       | Intra-<br>frequency<br>measuremen<br>t reporting<br>criteria<br>10.3.7.39 | This IE may only contain measurement events from 1A to 1I, but not measurement event 1J. |
| >Periodical reporting criteria                  |      |       | Periodical<br>reporting<br>criteria<br>10.3.7.53                          |  |

## 10.3.7.63 SFN-SFN observed time difference

| Information<br>Element/Group name | Need | Multi | Type and reference    | Semantics description  | Version |
|-----------------------------------|------|-------|-----------------------|--|---------|
| CHOICE type                       | MP   |       |                       |  |         |
| >Type 1                           |      |       | Integer(0<br>9830399) | According to T1_SFN-SFN_TIME in [19] and [20]. For FDD and 3.84 Mcps TDD and 7.68 Mcps TDD: 6946816 spare values are needed. |         |
|                                   |      |       | Integer(0 3276799)    | For 1.28 Mcps TDD:<br>13500416 spare values are needed.  | Rel-4   |
| >Type 2                           |      |       | Integer(0<br>40961)   | According to T2_SFN-SFN_TIME in [19] and [20]. 24574 spare values are needed.  |         |
|                                   |      |       | Integer(0<br>27649)   | For 1.28 Mcps TDD:<br>37886 spare values are needed.   | Rel-4   |

# 10.3.7.64 Time to trigger

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description |
|--------------------------------|------|-------|--|-----------------------|
| Time to trigger                | MP   |       | Integer(0,<br>10, 20, 40,<br>60, 80, 100,<br>120, 160,<br>200, 240,<br>320, 640,<br>1280, 2560,<br>5000) | Time in ms            |

## 10.3.7.65 Timeslot ISCP info

NOTE: Only for TDD

| Information Element/Group | Need | Multi | IE type and | Semantics description       |
|---------------------------|------|-------|-------------|-----------------------------|
| name                      |      |       | reference   |                             |
| Timeslot ISCP             | MP   |       | Integer     | According to                |
|                           |      |       | (091)       | UE_TS_ISCP_LEV in [20].     |
|                           |      |       |             | Thirty-six spare values are |
|                           |      |       |             | needed.                     |

# 10.3.7.66 Traffic volume event identity

| Information Element/Group     | Need | Multi | Type and               | Semantics description |
|-------------------------------|------|-------|------------------------|-----------------------|
| name                          |      |       | reference              |                       |
| Traffic volume event identity | MP   |       | Enumerated(<br>4a, 4b) |                       |

## 10.3.7.67 Traffic volume measured results list

| name                           |     |                 |              | •                              |
|--------------------------------|-----|-----------------|--------------|--------------------------------|
| T (C)                          | 0.0 |                 | reference    |                                |
| Traffic volume measurement     | OP  | 1 to            |              |                                |
| results                        |     | <maxrb></maxrb> |              |                                |
| >RB Identity                   | MP  |                 | RB Identity  |                                |
|                                |     |                 | 10.3.4.16    |                                |
| >RLC Buffers Payload           | OP  |                 | Enumerated(  | In bytes                       |
|                                |     |                 | 0, 4, 8, 16, | And N Kbytes = $N*1024$ bytes. |
|                                |     |                 | 32, 64, 128, | Twelve spare values are        |
|                                |     |                 | 256, 512,    | needed.                        |
|                                |     |                 | 1024, 2K,    |                                |
|                                |     |                 | 4K, 8K, 16K, |                                |
|                                |     |                 | 32K, 64K,    |                                |
|                                |     |                 | 128K, 256K,  |                                |
|                                |     |                 | 512K,        |                                |
|                                |     |                 | 1024K)       |                                |
| >Average of RLC Buffer Payload | OP  |                 | Enumerated(  | In bytes                       |
|                                |     |                 | 0, 4, 8, 16, | And N Kbytes = N*1024 bytes.   |
|                                |     |                 | 32, 64, 128, | Twelve spare values are        |
|                                |     |                 | 256, 512,    | needed.                        |
|                                |     |                 | 1024, 2K,    |                                |
|                                |     |                 | 4K, 8K, 16K, |                                |
|                                |     |                 | 32K, 64K,    |                                |
|                                |     |                 | 128K, 256K,  |                                |
|                                |     |                 | 512K,        |                                |
|                                |     |                 | 1024K)       |                                |
| >Variance of RLC Buffer        | OP  |                 | Enumerated(  | In bytes                       |
| Payload                        |     |                 | 0, 4, 8, 16, | And N Kbytes = N*1024 bytes.   |
| -7                             |     |                 | 32, 64, 128, | Two spare values are needed.   |
|                                |     |                 | 256, 512,    |                                |
|                                |     |                 | 1024, 2K,    |                                |
|                                |     |                 | 4K, 8K, 16K) |                                |

## 10.3.7.68 Traffic volume measurement

| Traffic volume measurement Object  Traffic volume measuremen t Object 10.3.7.70  Traffic volume measurement quantity  OP  Traffic volume measuremen t quantity 10.3.7.71  Traffic volume reporting quantity OP  Traffic Traffic | Information Element/Group         | Need | Multi | Type and    | Semantics description       |
|---|-----------------------------------|------|-------|-------------|-----------------------------|
| Object  volume measuremen t Object 10.3.7.70  Traffic volume measurement quantity  OP  Traffic volume measuremen t quantity  Traffic volume reporting quantity  OP  Traffic   | name                              | 00   |       | reference   |                             |
| measuremen t Object 10.3.7.70  Traffic volume measurement quantity  OP  Traffic volume measuremen t quantity  Traffic volume reporting quantity  OP  Traffic  |                                   | OP   |       |             |                             |
| t Object 10.3.7.70  Traffic volume measurement quantity  OP  Traffic volume measuremen t quantity 10.3.7.71  Traffic volume reporting quantity  Traffic   | Object                            |      |       |             |                             |
| Traffic volume measurement quantity  OP  Traffic volume measuremen t quantity  Traffic volume reporting quantity  OP  Traffic  Traffic  Traffic   |                                   |      |       |             |                             |
| Traffic volume measurement quantity  OP  Traffic volume measuremen t quantity 10.3.7.71  Traffic volume reporting quantity OP  Traffic  Traffic   |                                   |      |       |             |                             |
| quantity  volume measuremen t quantity 10.3.7.71  Traffic volume reporting quantity OP  Traffic   |                                   |      |       |             |                             |
| measuremen t quantity 10.3.7.71  Traffic volume reporting quantity OP Traffic   |                                   | OP   |       |             |                             |
| t quantity 10.3.7.71  Traffic volume reporting quantity OP Traffic  | quantity                          |      |       | volume      |                             |
| Traffic volume reporting quantity OP Traffic  |                                   |      |       |             |                             |
| Traffic volume reporting quantity OP Traffic  |                                   |      |       | t quantity  |                             |
|   |                                   |      |       |             |                             |
|   | Traffic volume reporting quantity | OP   |       | Traffic     |                             |
| volume  |                                   |      |       | volume      |                             |
| reporting   |                                   |      |       | reporting   |                             |
| quantity  |                                   |      |       | quantity    |                             |
| 10.3.7.74   |                                   |      |       | 10.3.7.74   |                             |
| Measurement validity OP Measuremen  | Measurement validity              | OP   |       | Measuremen  |                             |
| t validity  |                                   |      |       | t validitv  |                             |
| 10.3.7.51   |                                   |      |       |             |                             |
| CHOICE report criteria MP   |                                   | MP   |       |             |                             |
| >Traffic volume measurement Traffic   | >Traffic volume measurement       |      |       | Traffic     |                             |
| reporting criteria volume   | reporting criteria                |      |       | volume      |                             |
| measuremen  |                                   |      |       | measuremen  |                             |
| t reporting   |                                   |      |       | t reporting |                             |
| criteria  |                                   |      |       | criteria    |                             |
| 10.3.7.72   |                                   |      |       | 10.3.7.72   |                             |
| >Periodical reporting criteria Periodical   | >Periodical reporting criteria    |      |       | Periodical  |                             |
| reporting   |                                   |      |       | reporting   |                             |
| criteria  |                                   |      |       |             |                             |
| 10.3.7.53   |                                   |      |       | 10.3.7.53   |                             |
| >No reporting (no data)   | >No reporting                     |      |       |             | (no data)                   |
| Chosen when this  |                                   |      |       |             |                             |
| measurement only is used as   |                                   |      |       |             | measurement only is used as |
| additional measurement to   |                                   |      |       |             |                             |
| another measurement   |                                   |      |       |             |                             |

## 10.3.7.69 Traffic volume measurement event results

Contains the event result for a traffic volume measurement.

| Information Element/Group                       | Need                   | Multi | Type and  | Semantics description   |
|---|------------------------|-------|---|---|
| name  |                        |       | reference   |   |
| Uplink transport channel type causing the event | MP                     |       | Enumerated(<br>DCH,RACH,<br>USCH)                   | USCH is TDD only. RACH is the currently configured default in the uplink. For 1.28 Mcps TDD, if E-DCH is configured to the UE, and the Uplink transport channel type is USCH and UL Transport Channel identity is 32, it means E-DCH TVM is configured. |
| UL Transport Channel identity                   | CV-UL-<br>DCH/USC<br>H |       | Transport channel identity 10.3.5.18                |   |
| Traffic volume event identity                   | MP                     |       | Traffic<br>volume<br>event<br>identity<br>10.3.7.66 |   |

| Condition   | Explanation   |
|-------------|---|
| UL-DCH/USCH | If IE "Uplink transport channel type" is equal to "DCH" |
|             | or "USCH" (TDD only) this IE is mandatory present.      |
|             | Otherwise the IE is not needed.                         |

# 10.3.7.70 Traffic volume measurement object

Contains the measurement object information for a traffic volume measurement.

| Information Element/Group name     | Need                   | Multi                                 | Type and reference                   | Semantics description   |
|------------------------------------|------------------------|---------------------------------------|--------------------------------------|---|
| Traffic volume measurement objects | MP                     | 1 to<br><maxtrch<br>&gt;</maxtrch<br> |                                      |   |
| >Uplink transport channel type     | MP                     |                                       | Enumerated(<br>DCH,RACH,<br>USCH)    | USCH is TDD only. RACH is the currently configured default in the uplink. For 1.28 Mcps TDD, if E-DCH is configured to the UE, and the Uplink transport channel type is USCH and UL Transport Channel identity is 32, it means E-DCH TVM is configured. |
| >UL Target Transport Channel ID    | CV-UL-<br>DCH/USC<br>H |                                       | Transport channel identity 10.3.5.18 |   |

| Condition   | Explanation  |
|-------------|--|
| UL-DCH/USCH | If IE "Uplink transport channel type" is equal to "DCH" or "USCH" (TDD only) this IE is mandatory present. |
|             | Otherwise the IE is not needed.  |

# 10.3.7.71 Traffic volume measurement quantity

Contains the measurement quantity information for a traffic volume measurement.

| Information Element/Group name                 | Need   | Multi | Type and reference  | Semantics description             |
|--|--------|-------|---|-----------------------------------|
| Measurement quantity                           | MP     |       | Enumerated(<br>RLC buffer<br>payload,<br>Average<br>RLC buffer<br>payload,<br>Variance of<br>RLC buffer<br>payload) | This parameter should be ignored. |
| Time Interval to take an average or a variance | CV-A/V |       | Integer(20,<br>40,260, by<br>steps of 20)   | In ms                             |

| Condition | Explanation   |  |  |
|-----------|---|--|--|
| A/V       | This IE is mandatory present when "Average RLC        |  |  |
|           | buffer" or "Variance of RLC buffer payload" is chosen |  |  |
|           | and not needed otherwise.                             |  |  |

# 10.3.7.72 Traffic volume measurement reporting criteria

Contains the measurement reporting criteria information for a traffic volume measurement.

Event 4a: Transport Channel Traffic Volume [15] exceeds an absolute threshold.

Event 4b: Transport Channel Traffic Volume [15] becomes smaller than an absolute threshold.

| Information Element/Group name             | Need                   | Multi   | Type and reference   | Semantics description   |
|--|------------------------|---|--|---|
| Parameters sent for each transport channel | OP                     | 1 to<br><maxtrch<br>&gt;</maxtrch<br>         |  | This IE is always required, need is OP to align with ASN.1  |
| >Uplink transport channel type             | OP                     |   | Enumerated(<br>DCH,RACH,<br>USCH)  | USCH is TDD only. RACH is the currently configured default in the uplink. For 1.28 Mcps TDD, if E-DCH is configured to the UE, and the Uplink transport channel type is USCH and UL Transport Channel identity is 32, it means E-DCH TVM is configured. |
| >UL Transport Channel ID                   | CV-UL-<br>DCH/USC<br>H |   | Transport<br>channel<br>identity<br>10.3.5.18  |   |
| >Parameters required for each Event        | OP                     | 1 to<br><maxmeas<br>parEvent&gt;</maxmeas<br> |  |   |
| >>Traffic volume event identity            | MP                     |   | Traffic volume event identity 10.3.7.66  |   |
| >>Reporting Threshold                      | MP                     |   | Enumerated(<br>8,16,32,64,1<br>28,256,512,1<br>024,2K,3K,4<br>K,6K,8K,12K<br>,16K,24K,32<br>K,48K,64K,9<br>6K,128K,192<br>K,256K,384<br>K,512K,768<br>K) | Threshold in bytes And N Kbytes = N*1024 bytes  |
| >>Time to trigger                          | OP                     |   | Time to<br>trigger<br>10.3.7.64  | Indicates the period of time during which the event condition has to be satisfied, before sending a Measurement Report. Time in ms  |
| >>Pending time after trigger               | OP                     |   | Integer(250,<br>500, 1000,<br>2000, 4000,<br>8000,<br>16000)   | Indicates the period of time during which it is forbidden to send any new measurement reports with the same Traffic volume event identity even if the triggering condition is fulfilled. Time in milliseconds   |
| >>Tx interruption after trigger            | OP                     |   | Integer (250,<br>500, 1000,<br>2000, 4000,<br>8000,<br>16000)  | Time in milliseconds. Indicates how long the UE shall block DTCH transmissions on the RACH after a measurement report is triggered.   |

| Condition   | Explanation   |
|-------------|---|
| UL-DCH/USCH | If IE "Uplink transport channel type" is equal to "DCH" or "USCH" (TDD only) this IE is optional. Otherwise |
|             | the IE is not needed.   |

# 10.3.7.73 Traffic volume measurement system information

| Information Element/Group name   | Need | Multi | Type and reference                                       | Semantics description  |
|--|------|-------|--|--|
| Traffic volume measurement identity                                      | MD   |       | Measuremen<br>t identity<br>10.3.7.48                    | The traffic volume measurement identity has default value 4. |
| Traffic volume measurement object  | OP   |       | Traffic volume measuremen t object 10.3.7.70             |  |
| Traffic volume measurement quantity                                      | OP   |       | Traffic volume measuremen t quantity 10.3.7.71           |  |
| Traffic volume reporting quantity  | OP   |       | Traffic volume reporting quantity 10.3.7.74              |  |
| Measurement validity   | OP   |       | Measuremen<br>t validity<br>10.3.7.51                    |  |
| Measurement Reporting Mode   | MP   |       | Measuremen<br>t Reporting<br>Mode<br>10.3.7.49           |  |
| CHOICE reporting criteria >Traffic volume measurement reporting criteria | MP   |       | Traffic volume measuremen t reporting criteria 10.3.7.72 |  |
| >Periodical reporting criteria   |      |       | Periodical reporting criteria 10.3.7.53                  |  |

# 10.3.7.74 Traffic volume reporting quantity

Contains the reporting quantity information for a traffic volume measurement.

For all boolean types TRUE means inclusion in the report is requested.

| Information Element/Group                  | Need | Multi | Type and  | Semantics description |
|--|------|-------|-----------|-----------------------|
| name                                       |      |       | reference |                       |
| RLC Buffer Payload for each RB             | MP   |       | Boolean   |                       |
| Average of RLC Buffer Payload for each RB  | MP   |       | Boolean   |                       |
| Variance of RLC Buffer Payload for each RB | MP   |       | Boolean   |                       |

# 10.3.7.75 UE internal event identity

| Information Element/Group  | Need | Multi | Type and     | Semantics description |
|----------------------------|------|-------|--------------|-----------------------|
| name                       |      |       | reference    |                       |
| UE internal event identity | MP   |       | Enumerated(  |                       |
| -                          |      |       | 6a,6b,6c,6d, |                       |
|                            |      |       | 6e, 6f, 6g)  |                       |

## 10.3.7.76 UE internal measured results

| Information Element/Group name     | Need | Multi                   | Type and reference                                    | Semantics description   | Version |
|------------------------------------|------|-------------------------|---|---|---------|
| CHOICE mode                        | MP   |                         | reference   | description   |         |
| >FDD                               | IVIF |                         |   |   |         |
| >>UE Transmitted Power             | OP   |                         | UE<br>Transmitted<br>Power info<br>10.3.7.85          |   |         |
| >>UE Rx-Tx report entries          | OP   | 1 to<br><maxrl></maxrl> |   |   |         |
| >>>Primary CPICH info              | MP   |                         | Primary<br>CPICH info<br>10.3.6.60                    | Primary CPICH info for each cell included in the active set                           |         |
| >>>UE Rx-Tx time difference type 1 | MP   |                         | UE Rx-Tx<br>time<br>difference<br>type 1<br>10.3.7.83 | UE Rx-Tx time<br>difference in chip<br>for each RL<br>included in the<br>active set   |         |
| >TDD                               |      | 1                       |   | l   |         |
| >>UE Transmitted Power list        | OP   | 1 to<br><maxts></maxts> |   | UE Transmitted Power for each used uplink timeslot in ascending timeslot number order |         |
| >>>UE Transmitted Power            | MP   |                         | UE<br>Transmitted<br>Power info<br>10.3.7.85          |   |         |
| >>CHOICE TDD option                | MP   |                         |   |   | REL-4   |
| >>>3.84 Mcps TDD                   |      |                         |   |   | REL-4   |
| >>>Applied TA                      | OP   |                         | Uplink<br>Timing<br>Advance<br>10.3.6.95              | Uplink timing advance applied by the UE   |         |
| >>>>Extended Applied TA            | OP   |                         | Extended Uplink Timing Advance 10.3.6.95a             | Uplink timing advance applied by the UE   | REL-7   |
| >>>7.68 Mcps TDD                   |      |                         |   |   | REL-7   |
| >>>>Extended Applied TA            | OP   |                         | Extended Uplink Timing Advance 10.3.6.95a             | Uplink timing advance applied by the UE   | REL-7   |
| >>>1.28 Mcps TDD                   |      |                         |   |   | REL-4   |
| >>>T <sub>ADV</sub>                | OP   |                         | T <sub>ADV</sub> info<br>10.3.7.112                   |   | REL-4   |

#### 10.3.7.77 UE internal measurement

| Information Element/Group      | Need | Multi | Type and    | Semantics description       |
|--------------------------------|------|-------|-------------|-----------------------------|
| name                           |      |       | reference   |                             |
| UE internal measurement        | OP   |       | UE internal |                             |
| quantity                       |      |       | measuremen  |                             |
|                                |      |       | t quantity  |                             |
|                                |      |       | 10.3.7.79   |                             |
| UE internal reporting quantity | OP   |       | UE internal |                             |
|                                |      |       | reporting   |                             |
|                                |      |       | quantity    |                             |
|                                |      |       | 10.3.7.82   |                             |
| CHOICE report criteria         | MP   |       |             |                             |
| >UE internal measurement       |      |       | UE internal |                             |
| reporting criteria             |      |       | measuremen  |                             |
|                                |      |       | t reporting |                             |
|                                |      |       | criteria    |                             |
|                                |      |       | 10.3.7.80   |                             |
| >Periodical reporting criteria |      |       | Periodical  |                             |
|                                |      |       | reporting   |                             |
|                                |      |       | criteria    |                             |
|                                |      |       | 10.3.7.53   |                             |
| >No reporting                  |      |       |             | (no data)                   |
| -                              |      |       |             | Chosen when this            |
|                                |      |       |             | measurement only is used as |
|                                |      |       |             | additional measurement to   |
|                                |      |       |             | another measurement         |

| CHOICE report criteria                     | Condition under which the given report criteria is chosen                                  |
|--|--|
| UE internal measurement reporting criteria | Chosen when UE internal measurement event triggering is required                           |
| Periodical reporting criteria              | Chosen when periodical reporting is required   |
| No reporting                               | Chosen when this measurement only is used as additional measurement to another measurement |

## 10.3.7.78 UE internal measurement event results

This IE contains the measurement event results that are reported to UTRAN for UE internal measurements.

| Information Element/Group name | Need           | Multi | Type and reference                            | Semantics description |
|--------------------------------|----------------|-------|---|-----------------------|
| UE internal event identity     | MP             |       | UE internal<br>event<br>identity<br>10.3.7.75 |                       |
| CHOICE mode                    | MP             |       |   |                       |
| >FDD                           |                |       |   |                       |
| >Primary CPICH info            | CV-clause<br>1 |       | Primary<br>CPICH info<br>10.3.6.60            |                       |
| >TDD                           |                |       |   | (no data)             |

| Condition | Explanation   |
|-----------|---|
| Clause 1  | This IE is mandatory present if the IE "UE internal event identity" is set to "6f" or "6g", otherwise the IE is |
|           | not needed.   |

## 10.3.7.79 UE internal measurement quantity

The quantity the UE shall measure in case of UE internal measurement.

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description   | Version |
|--------------------------------|------|-------|--|---|---------|
| CHOICE mode                    | MP   |       | reference  | description   |         |
| >FDD                           | IVII |       |  |   |         |
| >>Measurement quantity         | MP   |       | Enumerated( UE Transmitted Power, UTRA Carrier RSSI, UE Rx-Tx time difference) |   |         |
| >TDD                           |      |       | ,  |   |         |
| >>Measurement quantity         | MP   |       | Enumerated( UE Transmitted Power, UTRA Carrier RSSI, TADV)                     | Measurement on<br>Timing Advance is<br>for 1.28 Mcps  | REL-4   |
|                                |      |       |  | TDD   |         |
| Filter coefficient             | OP   |       | Filter<br>coefficient<br>10.3.7.9  | If the IE "Measurement quantity" is set to "Rx-Tx time difference" and this IE is present, the UE behaviour is unspecified. |         |

#### 10.3.7.80 UE internal measurement reporting criteria

The triggering of the event-triggered reporting for a UE internal measurement. All events concerning UE internal measurements are labelled 6x where x is a, b, c.... In TDD, the events 6a - 6d are measured and reported on timeslot basis.

Event 6a: The UE Transmitted Power becomes larger than an absolute threshold

Event 6b: The UE Transmitted Power becomes less than an absolute threshold

Event 6c: The UE Transmitted Power reaches its minimum value

Event 6d: The UE Transmitted Power reaches its maximum value

Event 6e: The UE RSSI reaches the UEs dynamic receiver range

Event 6f (FDD): The UE Rx-Tx time difference for a RL included in the active set becomes larger than an absolute threshold

Event 6f (1.28 Mcps TDD): The time difference indicated by  $T_{ADV}$  becomes larger than an absolute threshold

Event 6g: The UE Rx-Tx time difference for a RL included in the active set becomes less than an absolute threshold

| Information Element/Group name                         | Need | Multi                                      | Type and reference                            | Semantics description | Version |
|--|------|--|---|-----------------------|---------|
| Parameters sent for each UE internal measurement event | OP   | 1 to<br><maxmeas<br>Event&gt;</maxmeas<br> |   |                       |         |
| >UE internal event identity                            | MP   |  | UE internal<br>event<br>identity<br>10.3.7.75 |                       |         |

| Information Element/Group                | Need           | Multi | Type and   | Semantics  | Version |
|--|----------------|-------|--|--|---------|
| name                                     |                |       | reference  | description  |         |
| >Time-to-trigger                         | MP             |       | Integer(0,<br>10, 20, 40,<br>60, 80, 100,<br>120, 160,<br>200, 240,<br>320, 640,<br>1280, 2560,<br>5000) | Time in ms. Indicates the period of time between the timing of event detection and the timing of sending Measurement Report. |         |
| >UE Transmitted Power Tx power threshold | CV-clause<br>1 |       | Integer(-<br>5033)   | Power in dBm. In event 6a, 6b.   |         |
| >UE Rx-Tx time difference threshold      | CV-clause<br>2 |       | Integer(768<br>1280)   | Time difference in chip. In event 6f, 6g.  |         |
| >T <sub>ADV</sub> threshold              | CV-clause<br>3 |       | Real (063<br>step 0.125)   | Time difference in chip. In event 6f   | REL-4   |

| Condition | Explanation   |
|-----------|---|
| Clause 1  | The IE is mandatory present if the IE "UE internal event identity" is set to "6a" or "6b", otherwise the IE                         |
|           | is not needed.  |
| Clause 2  | In FDD, the IE is mandatory present if the IE "UE internal event identity" is set to "6f" or "6g", otherwise the IE is not needed.  |
| Clause 3  | In 1.28 Mcps TDD the IE is mandatory present if the IE "UE internal event identity" is set to "6f", otherwise the IE is not needed. |

#### 10.3.7.81 Void

### 10.3.7.82 UE Internal reporting quantity

For all boolean types TRUE means inclusion in the report is requested.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| UE Transmitted Power           | MP   |       | Boolean            |                       |         |
| CHOICE mode                    | MP   |       |                    |                       |         |
| >FDD                           |      |       |                    |                       |         |
| >>UE Rx-Tx time difference     | MP   |       | Boolean            |                       |         |
| >TDD                           |      |       |                    |                       |         |
| >>CHOICE TDD option            |      |       |                    |                       | REL-4   |
| >>>3.84 Mcps TDD               |      |       |                    |                       | REL-4   |
| >>>Applied TA                  | MP   |       | Boolean            |                       |         |
| >>>7.68 Mcps TDD               |      |       |                    |                       | REL-7   |
| >>>Applied TA                  | MP   |       | Boolean            |                       | REL-7   |
| >>>1.28 Mcps TDD               |      |       |                    |                       | REL-4   |
| >>>T <sub>ADV</sub> info       | MP   |       | Boolean            |                       | REL-4   |

### 10.3.7.83 UE Rx-Tx time difference type 1

The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time), of the downlink DPCH or F-DPCH frame from the measured radio link, as defined in [7]. This measurement is for FDD only.

| Information Element/Group       | Need | Multi | Type and    | Semantics description        |
|---------------------------------|------|-------|-------------|------------------------------|
| name                            |      |       | reference   |                              |
| UE Rx-Tx time difference type 1 | MP   |       | Integer(768 | In chips.                    |
|                                 |      |       | 1280)       | 511 spare values are needed. |

#### 10.3.7.84 UE Rx-Tx time difference type 2

The difference in time between the UE uplink DPCCH/DPDCH frame transmission and the first detected path (in time), of the downlink DPCH or F-DPCH frame from the measured radio link, as defined in [7].

| Information Element/Group name  | Need | Multi | Type and reference | Semantics description |
|---------------------------------|------|-------|--------------------|-----------------------|
| UE Rx-Tx time difference type 2 | MP   |       | Integer<br>(08191) | According to [19].    |

#### 10.3.7.85 UE Transmitted Power info

| Information Element/Group name | Need | Multi | IE type and reference | Semantics description                     |
|--------------------------------|------|-------|-----------------------|---|
| UE Transmitted Power           | MP   |       | Integer<br>(0104)     | According to UE_TX_POWER in [19] and [20] |

#### 10.3.7.86 UE positioning Ciphering info

This IE contains information for the ciphering of UE positioning assistance data broadcast in System Information.

| Information Element/Group | Need | Multi | Type and      | Semantics description         |
|---------------------------|------|-------|---------------|-------------------------------|
| name                      |      |       | Reference     |                               |
| Ciphering Key Flag        | MP   |       | Bit string(1) |                               |
| Ciphering Serial Number   | MP   |       | Integer(065   | The serial number used in the |
|                           |      |       | 535)          | DES ciphering algorithm       |

# 10.3.7.87 UE positioning Error

| Information Element/Group name              | Need                        | Multi | Type and Reference   | Semantics description | Version |
|---|-----------------------------|-------|--|-----------------------|---------|
| Error reason                                | MP                          |       | Enumerated( Not Enough OTDOA Cells, Not Enough GPS Satellites, Assistance Data Missing, Not Accomplishe d GPS Timing Of Cell Frames, Undefined | Note 1                |         |
|   |                             |       | Error, Request Denied By User, Not Processed And Timeout, Reference Cell Not Serving Cell,   |                       |         |
|   |                             |       | Not Enough<br>GANSS<br>Satellites,<br>Not<br>Accomplishe<br>d GANSS<br>Timing Of<br>Cell Frames)   | Note 1                | REL-7   |
| GPS Additional Assistance Data<br>Request   | CV-<br>GPSdataM<br>issing   |       | UE positioning GPS Additional Assistance Data Request 10.3.7.88a   |                       |         |
| GANSS Additional Assistance<br>Data Request | CV-<br>GANSSdat<br>aMissing |       | UE positioning GANSS Additional Assistance Data Request 10.3.7.88c   |                       | REL-7   |

NOTE 1: The following table describes each value of the IE "Error reason".

| Value                      | Indication   |
|----------------------------|--|
| Not Enough OTDOA Cells     | There were not enough cells to be received.                                |
| Not Enough GPS Satellites  | There were not enough GPS satellites to be received.                       |
| Assistance Data Missing    | UE positioning or/and GANSS GPS assistance data missing.                   |
| Not Accomplished GPS       | UE was not able to accomplish the GPS timing of cell frames measurement.   |
| Timing Of Cell Frames      |  |
| Undefined Error            | Undefined error.   |
| Request Denied By User     | UE positioning request denied by upper layers.                             |
| Not Processed And          | UE positioning request not processed by upper layers and timeout.          |
| Timeout                    |  |
| Reference Cell Not Serving | UE was not able to read the SFN of the reference cell.                     |
| Cell                       |  |
| Not Enough GANSS           | There were not enough GANSS satellites to be received.                     |
| Satellites                 |  |
| Not Accomplished GANSS     | UE was not able to accomplish the GANSS timing of cell frames measurement. |
| Timing Of Cell Frames      |  |

| Condition        | Explanation  |
|------------------|--|
| GPSdataMissing   | The IE is optional if the IE "Error reason" is " Assistance Data Missing " and not needed otherwise. |
| GANSSdataMissing | The IE is optional if the IE "Error reason" is "Assistance Data Missing" and not needed otherwise.   |

# 10.3.7.88 UE positioning GPS acquisition assistance

This IE contains parameters that enable fast acquisition of the GPS signals in UE-assisted GPS positioning.

| Information Element/Group name                  | Need | Multi                     | Type and Reference   | Semantics description   | Version |
|---|------|---------------------------|--|---|---------|
| GPS TOW msec                                    | MP   |                           | Integer(06.04<br>8*10 <sup>8</sup> -1)                               | GPS Time of Week in milliseconds rounded down to the nearest millisecond unit. It is also the time when satellite information is valid. |         |
| UTRAN GPS reference time                        | OP   |                           |  |   |         |
| >UTRAN GPS timing of cell frames                | MP   |                           | Integer(0<br>232243199999<br>9)                                      | GPS timing of cell frames in steps of 1 chip.   |         |
| >CHOICE mode                                    | OP   |                           |  |   |         |
| >>FDD   |      |                           |  |   |         |
| >>>Primary CPICH Info                           | MP   |                           | Primary<br>CPICH Info<br>10.3.6.60                                   | Identifies the reference cell<br>for the GPS TOW-SFN<br>relationship  |         |
| >>TDD   |      |                           |  |   |         |
| >>>cell parameters id                           | MP   |                           | Cell parameters id 10.3.6.9  | Identifies the reference cell<br>for the GPS TOW-SFN<br>relationship  |         |
| >SFN  | MP   |                           | Integer(0409<br>5)   | The SFN which the UTRAN GPS timing of cell frames time stamps.  |         |
| UE Positioning GPS<br>ReferenceTime Uncertainty | OP   |                           | UE positioning<br>GPS reference<br>time<br>uncertainty<br>10.3.7.96a |   | REL-7   |
| Satellite information                           | MP   | 1 to<br><maxsat></maxsat> |  |   |         |
| >SatID  | MP   |                           | Integer (063)  | Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in [12].  |         |
| >Doppler (0 <sup>th</sup> order term)           | MP   |                           | Real(-<br>51205117.5   | Hz  |         |

| Information Element/Group name         | Need | Multi | Type and Reference   | Semantics description   | Version |
|--|------|-------|--|---|---------|
|  |      |       | by step of 2.5)  |   |         |
| >Extra Doppler                         | OP   |       |  |   |         |
| >>Doppler (1 <sup>st</sup> order term) | MP   |       | Real (-<br>0.9660.483<br>by step of<br>0.023)                      | Hz/s  |         |
| >>Doppler Uncertainty                  | MP   |       | Enumerated<br>(12.5,25,50,10<br>0,200)                             | Hz. Three spare values are needed. The Doppler experienced by a stationary UE is in the range "Doppler – Doppler Uncertainty" to "Doppler + Doppler Uncertainty".           |         |
| >Code Phase                            | MP   |       | Integer(0102<br>2)   | GPS chips. Increasing binary values of the field signify increasing predicted pseudoranges.   |         |
| >Integer Code Phase                    | MP   |       | Integer(019)   | Number of code periods that have elapsed since the latest GPS bit boundary, in units of C/A code period.  |         |
| >GPS Bit number                        | MP   |       | Integer(03)  | Specifies GPS bit number modulo 4   |         |
| >Code Phase Search Window              | MP   |       | Integer(1023,1<br>,2,3,4,6,8,12,1<br>6,24,32,48,64,<br>96,128,192) | Expected code-phase is in<br>the range "Code Phase –<br>Code Phase Search<br>Window" to "Code Phase +<br>Code Phase Search<br>Window".                                      |         |
| >Azimuth and Elevation                 | OP   |       |  |   |         |
| >>Azimuth                              | MP   |       | Real(0348.75<br>by step of<br>11.25)                               | Degrees An angle of x degrees means the satellite azimuth a is in the range x ≤ a < x+11.25 degrees.  |         |
| >>Elevation                            | MP   |       | Real(078.75<br>by step of<br>11.25)                                | Degrees An angle of y degrees means the satellite elevation e is in the range y ≤ e < y+11.25 degrees except for y=78.75 where the range is extended to include 90 degrees. |         |

# 10.3.7.88a UE positioning GPS Additional Assistance Data Request

| Information Element/Group name   | Need                       | Multi | Type and Reference | Semantics description   |
|----------------------------------|----------------------------|-------|--------------------|---|
| Almanac                          | MP                         |       | Boolean            | TRUE means requested  |
| UTC Model                        | MP                         |       | Boolean            | TRUE means requested  |
| Ionospheric model                | MP                         |       | Boolean            | TRUE means requested  |
| Navigation Model                 | MP                         |       | Boolean            | TRUE means requested  |
| DGPS Corrections                 | MP                         |       | Boolean            | TRUE means requested  |
| Reference Location               | MP                         |       | Boolean            | TRUE means requested  |
| Reference Time                   | MP                         |       | Boolean            | TRUE means requested  |
| Acquisition Assistance           | MP                         |       | Boolean            | TRUE means requested  |
| Real-Time Integrity              | MP                         |       | Boolean            | TRUE means requested  |
| Navigation Model Additional data | CV-<br>Navigation<br>Model |       |                    | this IE is present only if "Navigation Model" is set to TRUE otherwise it is absent |
| >GPS Week                        | MP                         |       | Integer<br>(01023) |   |

| Information Element/Group name | Need | Multi                     | Type and<br>Reference | Semantics description   |
|--------------------------------|------|---------------------------|-----------------------|---|
| >GPS_Toe                       | MP   |                           | Integer<br>(0167)     | GPS time of ephemeris in hours of the latest ephemeris set contained by the UE. Eighty-eight spare values needed. |
| >T-Toe limit                   | MP   |                           | Integer<br>(010)      | ephemeris age tolerance of<br>the UE to UTRAN in hours.<br>Five spare values needed.                              |
| >Satellites list related data  | MP   | 0 to<br><maxsat></maxsat> |                       |   |
| >>SatID                        | MP   |                           | Integer<br>(063)      | Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in [12].                        |
| >>IODE                         | MP   |                           | Integer<br>(0255)     | Issue of Data Ephemeris for SatID   |

#### 10.3.7.88b UE positioning GANSS reference measurement information

This IE provides reference code and Doppler measurement information of visible satellites of a GNSS constellation. The information enables fast acquisition of the GANSS signals in UE-assisted GANSS positioning. If the IE "UE positioning GPS acquisition assistance" is not included in IE "UE positioning measurement", the Satellite Information is valid at the time as given in the IE "UE positioning GANSS reference time" IE. I.e., if IE "UE positioning GANSS reference measurement information" is included in IE "UE positioning GANSS assistance data" and IE "UE positioning GPS acquisition assistance" is not included in IE "UE positioning measurement", the IE "UE positioning GPS acquisition assistance" is included in IE "UE positioning measurement", the IE "GPS TOW msec" and IE "UTRAN GPS reference time" included in IE "UE positioning GPS acquisition assistance" is also valid for the Satellite information in IE "UE positioning GANSS reference measurement information".

| Information Element/Group name         | Need | Multi                                    | Type and Reference                         | Semantics description   | Version |
|--|------|--|--|---|---------|
| GANSS Signal ID                        | OP   |  | GANSS<br>Signal Id<br>10.3.3.45a           | Absence of this field means Galileo L1 OS if GANSS_ID refers to Galileo. If this IE is asked by SIB 15.6, the GANSS shall be solved by the scheduling information.  | REL-7   |
| Satellite information                  | MP   | 1 to<br><maxgan<br>SSSat&gt;</maxgan<br> |  |   | REL-7   |
| >SatID                                 | MP   |  | Integer<br>(063)                           | Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in e.g. [61].   | REL-7   |
| >Doppler (0 <sup>th</sup> order term)  | MP   |  | Real(-<br>10241023.5<br>by step of<br>0.5) | m/s Conversion between m/s and Hz shall be made by using the nominal wavelength of the assisted signal.   | REL-7   |
| >Extra Doppler                         | OP   |  |  |   | REL-7   |
| >>Doppler (1 <sup>st</sup> order term) | MP   |  | Real (-<br>0.20.1 by<br>step of<br>1/210)  | m/s <sup>2</sup>  | REL-7   |
| >>Doppler Uncertainty                  | MP   |  | Enumerated (40,20,10,5, 2.5)               | m/s. The Doppler experienced by a stationary UE is in the range "Doppler – Doppler Uncertainty" to "Doppler + Doppler Uncertainty". Three spare values are needed.  | REL-7   |
| >Code Phase                            | MP   |  | Integer(010<br>23)                         | ms, scaling factor 2 <sup>-10</sup> Nominal chipping rate of the GNSS signal shall be used in conversion. Increasing binary values of the field signify increasing predicted code phases.   | REL-7   |
| >Integer Code Phase                    | MP   |  | Integer(012<br>7)                          | ms. Integer code phase (expressed modulo 128 ms) currently being transmitted at the Reference Time included in either IE "UE positioning GANSS reference time" or IE "UE positioning GPS acquisition assistance", as seen by a receiver at the Reference Location. The UE can calculate the expected code phase as follows: | REL-7   |

| Information Element/Group name | Need | Multi | Type and Reference                    | Semantics description   | Version |
|--------------------------------|------|-------|---------------------------------------|---|---------|
|                                |      |       |                                       | Reference Time – Integer<br>Code Phase + Code Phase.  |         |
| >Code Phase Search Window      | MP   |       | Bit string (5)                        | Coded expected code-phase is in the range "Code Phase – Code Phase Search Window" to "Code Phase + Code Phase Search Window". For coding description, see Note 1            | REL-7   |
| >Azimuth and Elevation         | OP   |       |                                       |   | REL-7   |
| >>Azimuth                      | MP   |       | Real(0348.<br>75 by step of<br>11.25) | Degrees An angle of x degrees means the satellite azimuth a is in the range x ≤ a < x+11.25 degrees.  | REL-7   |
| >>Elevation                    | MP   |       | Real(078.7<br>5 by step of<br>11.25)  | Degrees An angle of y degrees means the satellite elevation e is in the range y ≤ e < y+11.25 degrees except for y=78.75 where the range is extended to include 90 degrees. | REL-7   |

NOTE 1: Code phase search window parameter format:

| CODE_PHASE_SEARCH_WINDOW | Code Phase Search Window [ms] |
|--------------------------|-------------------------------|
| '00000'                  | No information                |
| '00001'                  | 0,002                         |
| '00010'                  | 0,004                         |
| '00011'                  | 0,008                         |
| '00100'                  | 0,012                         |
| '00101'                  | 0,016                         |
| '00110'                  | 0,024                         |
| '00111'                  | 0,032                         |
| '01000'                  | 0,048                         |
| '01001'                  | 0,064                         |
| '01010'                  | 0,096                         |
| '01011'                  | 0,128                         |
| '01100'                  | 0,164                         |
| '01101'                  | 0,200                         |
| '01110'                  | 0,250                         |
| '01111'                  | 0,300                         |
| '10000'                  | 0,360                         |
| '10001'                  | 0,420                         |
| '10010'                  | 0,480                         |
| '10011'                  | 0,540                         |
| '10100'                  | 0,600                         |
| '10101'                  | 0,660                         |
| '10110'                  | 0,720                         |
| '10111'                  | 0,780                         |
| '11000'                  | 0,850                         |
| '11001'                  | 1,000                         |
| '11010'                  | 1,150                         |
| '11011'                  | 1,300                         |
| '11100'                  | 1,450                         |
| '11101'                  | 1,600                         |
| '11110'                  | 1,800                         |
| '11111'                  | 2,000                         |

# 10.3.7.88c UE positioning GANSS additional assistance data request

| Information Element/Group name              | Need | Multi                                    | Type and Reference                | Semantics description  | Version |
|---|------|--|-----------------------------------|--|---------|
| GANSS Reference Time                        | MP   |  | Boolean                           | TRUE means requested   | REL-7   |
| GANSS Reference Location                    | MP   |  | Boolean                           | TRUE means requested   | REL-7   |
| GANSS Ionospheric model                     | MP   |  | Boolean                           | TRUE means requested   | REL-7   |
| GANSS Requested Generic<br>Assistance Data  | MP   | 1 to<br><maxgan<br>SS&gt;</maxgan<br>    |                                   |  | REL-7   |
| >GANSS ID                                   | OP   |  | Integer(07)                       | Absence of this IE means Galileo Values 0-7 reserved for future use.   | REL-7   |
| >GANSS Real-Time Integrity                  | MP   |  | Boolean                           | TRUE means requested   | REL-7   |
| >DGANSS Signal                              | OP   |  | DGANSS<br>Signal Id<br>10.3.7.88d |  | REL-7   |
| >GANSS Almanac                              | MP   |  | Boolean                           | TRUE means requested   | REL-7   |
| >GANSS Navigation Model                     | MP   |  | Boolean                           | TRUE means requested   | REL-7   |
| >GANSS Time Model GNSS-GNSS                 | OP   |  | BIT STRING<br>(8)                 | The reference system for requested GANSS time model GNSS-GNSS is as indicated in IE "GANSS ID". The models are requested for each system with respective bit set to "1". Bit 0 is set for GPS, Bit 1 is set for Galileo. Other bits are reserved   | REL-7   |
| >GANSS Reference<br>Measurement Information | MP   |  | Boolean                           | TRUE means requested   | REL-7   |
| >GANSS data bits                            | OP   |  |                                   |  | REL-7   |
| >>GANSS TOD                                 | MP   |  | INTEGER<br>(086399)               | This field contains the reference time modulo 86400 seconds of the first data bit of the requested data in integer seconds in GNSS specific system time of the GNSS indicated by IE "GANSS ID".  | REL-7   |
| >>Data bit assistance                       | MP   |  |                                   |  | REL-7   |
| >>>GANSS Signal ID                          | MP   |  | DGANSS<br>Signal Id<br>10.3.7.88d |  | REL-7   |
| >>>GANSS Data Bit Interval                  | MP   |  | Integer(015                       | This field represents the time length for which the Data Bit Assistance is requested. The Data Bit Assistance shall be relative to the time interval (GANSS TOD, GANSS TOD + Data Bit Interval). The Data Bit Interval <i>r</i> , expressed in seconds, is mapped to a binary number K with the following formula: $r = 0.1*2^{K}$ Value K=15 means that the time interval is not specified. | REL-7   |
| >>>Satellite Information                    | OP   | 1 to<br><maxgan<br>SSSat&gt;</maxgan<br> |                                   |  | REL-7   |
| >>>Satellite ID                             | MP   |  | Integer<br>(063)                  | Identifies the satellite for which<br>the Data Bit Assistance<br>request is applicable and is<br>equal to (SV ID No - 1) where<br>SV ID No is defined in e.g.<br>[61].   | REL-7   |
| >GANSS UTC model                            | MP   |  | Boolean                           | TRUE means Requested   | REL-7   |

| Information Element/Group name             | Need                                | Multi                                    | Type and<br>Reference | Semantics description   | Version |
|--|-------------------------------------|--|-----------------------|---|---------|
| >GANSS Navigation Model<br>Additional data | CV-<br>GANSSNa<br>vigation<br>Model |  |                       | this IE is present only if IE "GANSS Navigation Model" is set to TRUE otherwise it is absent    | REL-7   |
| >>GANSS Week                               | MP                                  |  | Integer<br>(04095)    |   | REL-7   |
| >>GANSS_Toe                                | MP                                  |  | Integer<br>(0167)     | GANSS time of ephemeris in hours of the latest ephemeris set contained by the UE.               | REL-7   |
| >>T-Toe limit                              | MP                                  |  | Integer<br>(010)      | ephemeris age tolerance of<br>the UE to UTRAN in hours.<br>Five spare values needed.            | REL-7   |
| >>Satellites list related data             | OP                                  | 1 to<br><maxgan<br>SSSat&gt;</maxgan<br> |                       |   | REL-7   |
| >>>SatID                                   | MP                                  |  | Integer<br>(063)      | Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in e.g. [61]. | REL-7   |
| >>>IOD                                     | MP                                  |  | Integer<br>(01023)    | Issue of Data for SatID   | REL-7   |

### 10.3.7.88d DGANSS Signal Id

The DGANSS signal Id refers to the signal for which differential corrections or data bit assistance are required. It depends on the GANSS ID. Each bit refers to a particular signal. When the bit is set to 1, this means that the differential corrections or data bit assistance are requested for this particular signal. Differential corrections or data bit assistance can be requested for several signals using the bit string.

| Information Element/Group name | Need | Multi | Type and<br>Reference | Semantics description | Version |
|--------------------------------|------|-------|-----------------------|-----------------------|---------|
| DGANSS Signal Id               | MP   |       | BIT STRING<br>(8)     | See Note 1.           | REL-7   |

#### NOTE 1:

| GANSS Id          | Bit<br>number | Explanation |
|-------------------|---------------|-------------|
|                   | 0             | Galileo L1  |
|                   | 1             | Galileo E5A |
|                   | 2             | Galileo E5B |
| Default : Galileo | 3             | Galileo E6  |
|                   | 4             | spare       |
|                   | 5             | Spare       |
|                   | 6             | Spare       |
|                   | 7             | Spare       |

# 10.3.7.89 UE positioning GPS almanac

This IE contains a reduced-precision subset of the ephemeris and clock correction parameters.

| Information Element/Group name | Need | Multi             | Type and Reference | Semantics description                                |
|--------------------------------|------|-------------------|--------------------|--|
| WNa                            | MP   |                   | Bit string(8)      | Almanac Reference Week [12]                          |
| Satellite information          | MP   | 1 to              |                    |  |
|                                |      | <maxsat></maxsat> |                    |  |
| >DataID                        | MP   |                   | Integer(03)        | See [12]   |
| >SatID                         | MP   |                   | Enumerated(        | Identifies the satellite and is                      |
|                                |      |                   | 063)               | equal to (SV ID No - 1) where                        |
|                                |      |                   |                    | SV ID No is defined in [12].                         |
| >e                             | MP   |                   | Bit string(16)     | Eccentricity [12]                                    |
| >t <sub>oa</sub>               | MP   |                   | Bit string(8)      | Reference Time of Almanac [12]                       |
| >δί                            | MP   |                   | Bit string(16)     |  |
| >OMEGADOT                      | MP   |                   | Bit string(16)     | Longitude of Ascending Node                          |
|                                |      |                   |                    | of Orbit Plane at Weekly                             |
|                                |      |                   |                    | Epoch (semi-circles/sec) [12]                        |
| >SV Health                     | MP   |                   | Bit string(8)      |  |
| >A <sup>1/2</sup>              | MP   |                   | Bit string(24)     | Semi-Major Axis (meters) <sup>1/2</sup> [12]         |
| >OMEGA <sub>0</sub>            | MP   |                   | Bit string(24)     | Longitude of Ascending Node of Orbit Plane at Weekly |
|                                |      |                   |                    | Epoch (semi-circles) [12]                            |
| >M <sub>0</sub>                | MP   |                   | Bit string(24)     | Mean Anomaly at Reference                            |
|                                |      |                   |                    | Time (semi-circles) [12]                             |
| >0                             | MP   |                   | Bit string(24)     | Argument of Perigee (semicircles) [12]               |
| >af <sub>0</sub>               | MP   |                   | Bit string(11)     | apparent clock correction [12]                       |
| >af <sub>1</sub>               | MP   |                   | Bit string(11)     | apparent clock correction [12]                       |
| SV Global Health               | OP   |                   | Bit                | This enables GPS time                                |
|                                |      |                   | string(364)        | recovery and possibly                                |
|                                |      |                   |                    | extended GPS correlation                             |
|                                |      |                   |                    | intervals. It is specified in page                   |
|                                |      |                   |                    | 25 of subframes 4 and 5 [12]                         |

## 10.3.7.89a UE positioning GANSS almanac

This IE contains a reduced-precision subset of the ephemeris and clock correction parameters.

| Information Element/Group name | Need | Multi                                    | Type and<br>Reference                   | Semantics description  | Version |
|--------------------------------|------|--|---|--|---------|
| Week Number                    | MP   |  | Integer(025<br>5)                       | Almanac reference week ,<br>number of weeks since the<br>beginning of GANSS specific<br>system time (mod 256)                              | REL-7   |
| Keplerian parameters           | OP   |  |   | NOTE   | REL-7   |
| >T <sub>oa</sub>               | MP   |  | Integer(060<br>2112 by step<br>of 4096) | Almanac Reference Time<br>common to all satellites in<br>GANSS Almanac using<br>Keplerian Parameters given in<br>GNSS specific system time | REL-7   |
| >IOD <sub>a</sub>              | MP   |  | INTEGER(03)                             | Issue-Of –Data, common to all satellites   | REL-7   |
| >Satellite information KP      | MP   | 1 to<br><maxgan<br>SSSat&gt;</maxgan<br> |   | Almanacs are in the order of the SV IDs, the smallest ID first.  | REL-7   |
| >>SV ID                        | MP   |  | Integer<br>(063)                        | Satellite ID   | REL-7   |
| >>e                            | MP   |  | Bit string(11)                          | Eccentricity, dimensionless [61]   | REL-7   |
| >>δi                           | MP   |  | Bit string(11)                          | semi-circles [61]  | REL-7   |
| >>OMEGADOT                     | MP   |  | Bit string(11)                          | Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles/sec) [61]   | REL-7   |
| >>SV Health KP                 | MP   |  | Bit string(4)                           | Dimensionless. For GANSS Id referring to Galileo, this is described in [61]  | REL-7   |
| >>delta A <sup>1/2</sup>       | MP   |  | Bit string(17)                          | Semi-Major Axis delta (meters) <sup>1/2</sup> [61]   | REL-7   |
| >>OMEGA <sub>0</sub>           | MP   |  | Bit string(16)                          | Longitude of Ascending Node<br>of Orbit Plane at Weekly<br>Epoch (semi-circles) [61]   | REL-7   |
| >>M <sub>0</sub>               | MP   |  | Bit string(16)                          | Mean Anomaly at Reference<br>Time (semi-circles) [61]  | REL-7   |
| >>0                            | MP   |  | Bit string(16)                          | Argument of Perigee (semi-<br>circles) [61]  | REL-7   |
| >>af <sub>0</sub>              | MP   |  | Bit string(14)                          | Seconds [61]   | REL-7   |
| >>af <sub>1</sub>              | MP   |  | Bit string(11)                          | sec/sec [61]   | REL-7   |

NOTE: This IE shall contain exactly one of the optional fiels indicated by "NOTE".

#### 10.3.7.90 UE positioning GPS assistance data

This IE contains GPS assistance data.

| Information Element/Group name            | Need | Multi | Type and Reference   | Semantics description                  |
|---|------|-------|--|--|
| UE positioning GPS reference time         | OP   |       | UE positioning GPS reference time 10.3.7.96                                      |  |
| UE positioning GPS reference UE position  | OP   |       | Ellipsoid<br>point with<br>altitude and<br>uncertainty<br>ellipsoid<br>10.3.8.4c | A priori knowledge of UE 3-D position. |
| UE positioning GPS DGPS corrections       | OP   |       | UE<br>positioning<br>GPS DGPS<br>corrections<br>10.3.7.91                        |  |
| UE positioning GPS navigation model       | OP   |       | UE positioning GPS navigation model 10.3.7.94                                    |  |
| UE positioning GPS ionospheric model      | OP   |       | UE positioning GPS ionospheric model 10.3.7.92                                   |  |
| UE positioning GPS UTC model              | OP   |       | UE<br>positioning<br>GPS UTC<br>model<br>10.3.7.97                               |  |
| UE positioning GPS almanac                | OP   |       | UE<br>positioning<br>GPS<br>almanac<br>10.3.7.89                                 |  |
| UE positioning GPS acquisition assistance | OP   |       | UE positioning GPS acquisition assistance 10.3.7.88                              |  |
| UE positioning GPS real-time integrity    | OP   |       | UE positioning GPS real-time integrity 10.3.7.95                                 |  |

10.3.7.90a Void

# 10.3.7.90b UE positioning GANSS assistance data

This IE contains GANSS assistance data.

| Information Element/Group name                          | Need | Multi                                   | Type and Reference   | Semantics description  | Version |
|---|------|---|--|--|---------|
| UE positioning GANSS reference time                     | OP   |   | UE<br>positioning<br>GANSS<br>reference<br>time<br>10.3.7.960                    |  | REL-7   |
| UE positioning GANSS reference UE position              | OP   |   | Ellipsoid<br>point with<br>altitude and<br>uncertainty<br>ellipsoid<br>10.3.8.4c | A priori knowledge of UE 3-D position.If IE "UE positioning GPS assistance data" is present, this IE should not be included to both IEs. | REL-7   |
| UE positioning GANSS ionospheric model                  | OP   |   | UE positioning GANSS ionospheric model 10.3.7.92a                                |  | REL-7   |
| GANSS Generic Assistance<br>Data                        | OP   | 1 to<br><maxgan<br>SS&gt;</maxgan<br>   |  |  | REL-7   |
| >GANSS ID   | OP   |   | Integer(07)  | Absence of this IE means Galileo Values 0-7 reserved for future use.   | REL-7   |
| >GANSS Time Models                                      | OP   | 1 to<br><maxgan<br>SS-1&gt;</maxgan<br> |  |  | REL-7   |
| >>GANSS Time Model                                      | MP   |   | UE<br>positioning<br>GANSS time<br>model<br>10.3.7.97a                           |  | REL-7   |
| >UE positioning DGANSS corrections                      | OP   |   | UE positioning DGANSS corrections 10.3.7.91b                                     |  | REL-7   |
| >UE positioning GANSS navigation model                  | OP   |   | UE positioning GANSS navigation model 10.3.7.94a                                 |  | REL-7   |
| >UE positioning GANSS real-<br>time integrity           | OP   |   | UE positioning GANSS real-time integrity 10.3.7.95b                              |  | REL-7   |
| >UE positioning GANSS data bit assistance               | OP   |   | UE positioning GANSS data bit assistance 10.3.7.97b                              |  | REL-7   |
| >UE positioning GANSS reference measurement information | OP   |   | UE positioning GANSS reference measuremen t information 10.3.7.88b               |  | REL-7   |
| >UE positioning GANSS almanac                           | OP   |   | UE<br>positioning<br>GANSS<br>almanac  |  | REL-7   |

| Information Element/Group       | Need | Multi | Type and  | Semantics description | Version |
|---------------------------------|------|-------|---|-----------------------|---------|
| name                            |      |       | Reference   |                       |         |
|                                 |      |       | 10.3.7.89a  |                       |         |
| >UE positioning GANSS UTC model | OP   |       | UE<br>positioning<br>GANSS UTC<br>model<br>10.3.7.97c |                       | REL-7   |

## 10.3.7.91 UE positioning GPS DGPS corrections

This IE contains DGPS corrections to be used by the UE.

| Information Element/Group name | Need                     | Multi                     | Type and Reference   | Semantics description   |
|--------------------------------|--------------------------|---------------------------|--|---|
| GPS TOW sec                    | MP                       |                           | Integer(060<br>4799)   | seconds GPS time-of-week when the DGPS corrections were calculated  |
| Status/Health                  | MP                       |                           | Enumerated(<br>UDRE scale<br>1.0, UDRE<br>scale 0.75,<br>UDRE scale<br>0.5, UDRE<br>scale 0.3,<br>UDRE scale<br>0.2, UDRE<br>scale 0.1, no<br>data, invalid<br>data) |   |
| DGPS information               | CV-<br>Status/Hea<br>Ith | 1 to<br><maxsat></maxsat> |  | If the Cipher information is included these fields are ciphered.  |
| >SatID                         | MP                       |                           | Enumerated (063)   | Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in [12].  |
| >IODE                          | MP                       |                           | Integer(025<br>5)  |   |
| >UDRE                          | MP                       |                           | Enumerated(<br>UDRE ≤ 1.0<br>m,<br>1.0m <<br>UDRE ≤<br>4.0m,<br>4.0m <<br>UDRE ≤<br>8.0m,<br>8.0m <<br>UDRE)   | The value in this field shall be multiplied by the UDRE Scale Factor in the IE Status/Health to determine the final UDRE estimate for the particular satellite. |
| >PRC                           | MP                       |                           | Real(-<br>655.04655.<br>04 by step of<br>0.32)   | meters (different from [13])  |
| >RRC                           | MP                       |                           | Real(-<br>4.0644.064<br>by step of<br>0.032)   | meters/sec (different from [13])  |
| >Delta PRC2                    | MP                       |                           | Integer(-<br>127127)   | In this version of the protocol this IE should be set to zero and the UE shall ignore it  |
| >Delta RRC2                    | MP                       |                           | Real(-<br>0.2240.224<br>by step of<br>0.032)   | In this version of the protocol this IE should be set to zero and the UE shall ignore it  |

| Information Element/Group | Need | Multi | Type and                                     | Semantics description   |
|---------------------------|------|-------|--|---|
| name                      |      |       | Reference                                    |   |
| >Delta PRC3               | OP   |       | Integer(-<br>127127)                         | This IE should not be included in this version of the protocol and if received the UE shall ignore it |
| >Delta RRC3               | OP   |       | Real(-<br>0.2240.224<br>by step of<br>0.032) | This IE should not be included in this version of the protocol and if received the UE shall ignore it |

| Condition     | Explanation   |
|---------------|---|
| Status/Health | This IE is mandatory present if "status" is not equal to "no data" or "invalid data", otherwise the IE is not needed. |

## 10.3.7.91a UE positioning GPS Ephemeris and Clock Correction parameters

This IE contains information for GPS ephemeris and clock correction.

| Information Element/Group name | Need | Multi | Type and Reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| C/A or P on L2                 | MP   |       | Bit string(2)      | Code(s) on L2 Channel [12]   |
| URA Index                      | MP   |       | Bit string(2)      | User Range Accuracy [12]   |
| SV Health                      | MP   |       | Bit string(4)      | [12]   |
| IODC                           | MP   |       | Bit string(10)     | Issue of Data, Clock [12]  |
| L2 P Data Flag                 | MP   |       | Bit string(1)      | [12]   |
| SF 1 Reserved                  | MP   |       | Bit string(87)     | [12]   |
| T <sub>GD</sub>                | MP   |       | Bit string(8)      | Estimated group delay differential [12]  |
| toc                            | MP   |       | Bit string(16)     | apparent clock correction [12]   |
| af <sub>2</sub>                | MP   |       | Bit string(8)      | apparent clock correction [12]   |
| af <sub>1</sub>                | MP   |       | Bit string(16)     | apparent clock correction [12]   |
| af <sub>0</sub>                | MP   |       | Bit string(22)     | apparent clock correction [12]   |
| C <sub>rs</sub>                | MP   |       | Bit string(16)     | Amplitude of the Sine<br>Harmonic Correction Term to<br>the Orbit Radius (meters) [12]             |
| Δη                             | MP   |       | Bit string(16)     | Mean Motion Difference From<br>Computed Value (semi-<br>circles/sec) [12]                          |
| M <sub>0</sub>                 | MP   |       | Bit string(32)     | Mean Anomaly at Reference<br>Time (semi-circles) [12]  |
| Cuc                            | MP   |       | Bit string(16)     | Amplitude of the Cosine Harmonic Correction Term To The Argument Of Latitude (radians) [12]        |
| е                              | MP   |       | Bit string(32)     | c  |
| Cus                            | MP   |       | Bit string(16)     | Amplitude of the Sine<br>Harmonic Correction Term To<br>The Argument Of Latitude<br>(radians) [12] |
| (A) <sup>1/2</sup>             | MP   |       | Bit string(32)     | Semi-Major Axis (meters) <sup>1/2</sup> [12]   |
| t <sub>oe</sub>                | MP   |       | Bit string(16)     | Reference Time Ephemeris [12]  |
| Fit Interval Flag              | MP   |       | Bit string(1)      | [12]   |
| AODO                           | MP   |       | Bit string(5)      | Age Of Data Offset [12]  |
| C <sub>ic</sub>                | MP   |       | Bit string(16)     | Amplitude of the Cosine Harmonic Correction Term To The Angle Of Inclination (radians) [12]        |

| Information Element/Group name | Need | Multi | Type and<br>Reference | Semantics description   |
|--------------------------------|------|-------|-----------------------|---|
| OMEGA <sub>0</sub>             | MP   |       | Bit string(32)        | Longitude of Ascending Node<br>of Orbit Plane at Weekly<br>Epoch (semi-circles) [12]      |
| C <sub>is</sub>                | MP   |       | Bit string(16)        | Amplitude of the Sine Harmonic Correction Term To The Angle Of Inclination (radians) [12] |
| i <sub>0</sub>                 | MP   |       | Bit string(32)        | Inclination Angle at Reference<br>Time (semi-circles) [12]                                |
| C <sub>rc</sub>                | MP   |       | Bit string(16)        | Amplitude of the Cosine<br>Harmonic Correction Term to<br>the Orbit Radius (meters) [12]  |
| ω                              | MP   |       | Bit string(32)        | Argument of Perigee (semi-circles) [12]   |
| OMEGAdot                       | MP   |       | Bit string(24)        | Longitude of Ascending Node<br>of Orbit Plane at Weekly<br>Epoch (semi-circles/sec) [12]  |
| Idot                           | MP   |       | Bit string(14)        | Rate of Inclination Angle (semi-circles/sec) [12]   |

# 10.3.7.91b UE positioning DGANSS corrections

This IE contains DGANSS corrections to be used by the UE.

| Information Element/Group name | Need                     | Multi                                    | Type and Reference  | Semantics description   | Version |
|--------------------------------|--------------------------|--|---|---|---------|
| DGANSS Reference Time          | MP                       |  | Integer(035<br>70 by step of<br>30)   | Seconds. Time in GNSS system time (modulo 3600 s) when the DGANSS corrections were calculated   | REL-7   |
| DGANSS information             | MP                       | 1 to<br><maxsgnt<br>ype&gt;</maxsgnt<br> |   |   | REL-7   |
| >GANSS Signal ID               | OP                       | 71                                       | GANSS<br>Signal Id<br>10.3.3.45a  | Absence of this field means<br>Galileo L1 OS if GANSS_ID<br>refers to Galileo.  | REL-7   |
| >Status/Health                 | MP                       |  | Enumerated( UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.2, UDRE scale 0.1, no data, invalid data) |   | REL-7   |
| >DGANSS signal information     | CV-<br>Status/Hea<br>Ith | 1 to<br><maxgan<br>SSSat&gt;</maxgan<br> | ,   | If the Cipher information is included these fields are ciphered.  | REL-7   |
| >>SatID                        | MP                       |  | Integer<br>(063)  | Identifies the satellite and is equal to (SV ID No - 1)   | REL-7   |
| >>IOD                          | MP                       |  | Bit string(10)  | · · · · · · · · · · · · · · · · · · ·   | REL-7   |
| >>UDRE                         | MP                       |  | Enumerated(<br>UDRE ≤ 1.0<br>m,<br>1.0m <<br>UDRE ≤<br>4.0m,<br>4.0m <<br>UDRE ≤<br>8.0m,<br>8.0m <<br>UDRE)                        | The value in this field shall be multiplied by the UDRE Scale Factor in the IE Status/Health to determine the final UDRE estimate for the particular satellite. | REL-7   |
| >>PRC                          | MP                       |  | Real(-<br>655.04655.<br>04 by step of<br>0.32)  | meters  | REL-7   |
| >>RRC                          | MP                       |  | Real(-<br>4.0644.064<br>by step of<br>0.032)  | meters/sec  | REL-7   |

| Condition     | Explanation   |
|---------------|---|
| Status/Health | This IE is mandatory present if "status" is not equal to "no data" or "invalid data", otherwise the IE is not needed. |

## 10.3.7.91c UE positioning GANSS orbit model

This IE contains information for GANSS orbit model parameters.

| Information Element/Group name | Need | Multi | Type and Reference | Semantics description   | Version |
|--------------------------------|------|-------|--------------------|---|---------|
| Keplerian Parameters           | OP   |       |                    | NOTE  | REL-7   |
| >t <sub>oe</sub>               | MP   |       | Bit String(14)     | Time-of-Ephemeris in seconds, scale factor 60 [61]  | REL-7   |
| >ω                             | MP   |       | Bit string(32)     | Argument of Perigee (semi-<br>circles) [61]   | REL-7   |
| >∆n                            | MP   |       | Bit string(16)     | Mean Motion Difference From<br>Computed Value (semi-<br>circles/sec) [61]                   | REL-7   |
| >M <sub>0</sub>                | MP   |       | Bit string(32)     | Mean Anomaly at Reference<br>Time (semi-circles) [61]                                       | REL-7   |
| >OMEGAdot                      | MP   |       | Bit string(24)     | Longitude of Ascending Node of Orbit Plane at Weekly Epoch (semi-circles/sec) [61]          | REL-7   |
| >e                             | MP   |       | Bit string(32)     | Eccentricity, scale factor 2 <sup>-33</sup> [61]  | REL-7   |
| >ldot                          | MP   |       | Bit string(14)     | Rate of Inclination Angle (semi-circles/sec) [61]   | REL-7   |
| >sqrtA                         | MP   |       | Bit String(32)     | Semi-Major Axis in (meters) <sup>1/2</sup> , scale factor 2 <sup>-19</sup> [61]             | REL-7   |
| >i <sub>0</sub>                | MP   |       | Bit string(32)     | Inclination Angle at Reference<br>Time (semi-circles) [61]                                  | REL-7   |
| >OMEGA <sub>0</sub>            | MP   |       | Bit string(32)     | Longitude of Ascending Node<br>of Orbit Plane at Weekly<br>Epoch (semi-circles) [61]        | REL-7   |
| >C <sub>rs</sub>               | MP   |       | Bit string(16)     | Amplitude of the Sine<br>Harmonic Correction Term to<br>the Orbit Radius (meters) [61]      | REL-7   |
| >C <sub>is</sub>               | MP   |       | Bit string(16)     | Amplitude of the Sine Harmonic Correction Term To The Angle Of Inclination (radians) [61]   | REL-7   |
| >C <sub>us</sub>               | MP   |       | Bit string(16)     | Amplitude of the Sine Harmonic Correction Term To The Argument Of Latitude (radians) [61]   | REL-7   |
| >C <sub>rc</sub>               | MP   |       | Bit string(16)     | Amplitude of the Cosine Harmonic Correction Term to the Orbit Radius (meters) [61]          | REL-7   |
| >C <sub>ic</sub>               | MP   |       | Bit string(16)     | Amplitude of the Cosine Harmonic Correction Term To The Angle Of Inclination (radians) [61] | REL-7   |
| >C <sub>uc</sub>               | MP   |       | Bit string(16)     | Amplitude of the Cosine Harmonic Correction Term To The Argument Of Latitude (radians) [61] | REL-7   |

NOTE: This IE shall contain exactly one of the optional fiels indicated by "NOTE".

#### 10.3.7.91d UE positioning GANSS clock model

The IE contains fields needed to model the GANSS clock parameters.

| Information Element/Group name | Need | Multi   | Type and Reference | Semantics description  | Version |
|--------------------------------|------|---|--------------------|--|---------|
| Satellite clock model          | MP   | 1 to<br><maxsatclo<br>ckModels&gt;</maxsatclo<br> |                    | There may be more than one clock model included if defined in SIS ICD (e.g. two for Galileo) | REL-7   |
| >t <sub>oc</sub>               | MP   |   | BIT<br>STRING(14)  | Time-of-Clock in seconds. Scale factor 60 seconds.   | REL-7   |
| >a <sub>f2</sub>               | MP   |   | BIT STRING<br>(12) | sec/sec <sup>2</sup> , scale factor 2 <sup>-65</sup> for Galileo                             | REL-7   |
| >a <sub>f1</sub>               | MP   |   | BIT STRING<br>(18) | sec/sec, scale factor 2 <sup>-45</sup>   | REL-7   |
| >a <sub>f0</sub>               | MP   |   | BIT STRING<br>(28) | sec, scale factor 2 <sup>-33</sup>   | REL-7   |
| >T <sub>GD</sub>               | OP   |   | BIT STRING<br>(10) | sec, scale factor 2 <sup>-32</sup> for Gaileo  | REL-7   |
| >Model ID                      | OP   |   | Integer(01)        | NOTE 1   | REL-7   |

#### NOTE 1: Coding of Model ID:

| GNSS    | Value | Explanation |
|---------|-------|-------------|
| Galileo | 0     | I/Nav       |
|         | 1     | F/Nav       |

# 10.3.7.92 UE positioning GPS ionospheric model

The IE contains fields needed to model the propagation delays of the GPS signals through the ionosphere.

| Information Element/Group | Need | Multi | Type and      | Semantics description |
|---------------------------|------|-------|---------------|-----------------------|
| name                      |      |       | Reference     |                       |
| $\alpha_0$                | MP   |       | Bit string(8) | Note 1                |
| $\alpha_1$                | MP   |       | Bit string(8) | Note 1                |
| α <sub>2</sub>            | MP   |       | Bit string(8) | Note 1                |
| $\alpha_3$                | MP   |       | Bit string(8) | Note 1                |
| $\beta_0$                 | MP   |       | Bit string(8) | Note 2                |
| β1                        | MP   |       | Bit string(8) | Note 2                |
| $\beta_2$                 | MP   |       | Bit string(8) | Note 2                |
| $\beta_3$                 | MP   |       | Bit string(8) | Note 2                |

NOTE 1: The parameters  $\alpha n$  are the coefficients of a cubic equation representing the amplitude of the vertical delay [12].

NOTE 2: The parameters  $\beta$ n are the coefficients of a cubic equation representing the period of the ionospheric model [12].

## 10.3.7.92a UE positioning GANSS ionospheric model

The IE contains fields needed to model the propagation delays of the GANSS signals through the ionosphere.

| Information Element/Group name           | Need | Multi | Type and<br>Reference | Semantics description                     | Version |
|--|------|-------|-----------------------|---|---------|
| $a_{i0}$                                 | MP   |       | Bit string(12)        | This parameter is used as defined in [61] | REL-7   |
| a <sub>i1</sub>                          | MP   |       | Bit string(12)        | This parameter is used as defined in [61] | REL-7   |
| a <sub>i2</sub>                          | MP   |       | Bit string(12)        | This parameter is used as defined in [61] | REL-7   |
| GANSS Ionosphere Regional<br>Storm Flags | OP   |       |                       |   | REL-7   |
| >Storm Flag 1                            | MP   |       | Boolean               | This parameter is used as defined in [61] | REL-7   |
| >Storm Flag 2                            | MP   |       | Boolean               | This parameter is used as defined in [61] | REL-7   |
| >Storm Flag 3                            | MP   |       | Boolean               | This parameter is used as defined in [61] | REL-7   |
| >Storm Flag 4                            | MP   |       | Boolean               | This parameter is used as defined in [61] | REL-7   |
| >Storm Flag 5                            | MP   |       | Boolean               | This parameter is used as defined in [61] | REL-7   |

## 10.3.7.93 UE positioning GPS measured results

| Information Element/Group name | Need | Multi | Type and Reference                     | Semantics description   | Version |
|--------------------------------|------|-------|--|---|---------|
| CHOICE Reference Time          | MP   |       |  |   |         |
| >UTRAN reference time          |      |       |  |   |         |
| >>UE GPS timing of cell frames | MP   |       | Integer(0<br>371589119999<br>99        | GPS Time of Week in units of 1/16 <sup>th</sup> UMTS chips according to [19]. 33209832177664 spare values are needed. |         |
| >>CHOICE mode                  | MP   |       |  |   |         |
| >>>FDD                         |      |       |  |   |         |
| >>>Primary CPICH Info          | MP   |       | Primary<br>CPICH Info<br>10.3.6.60     | Identifies the reference cell for the GPS TOW-SFN relationship.   |         |
| >>>TDD                         |      |       |  |   |         |
| >>>cell parameters id          | MP   |       | Cell parameters id 10.3.6.9            | Identifies the reference cell for the GPS TOW-SFN relationship.   |         |
| >>Reference SFN                | MP   |       | Integer(0409<br>5)                     | The SFN for which the location is valid. This IE indicates the SFN at which the UE timing of cell frames is captured. |         |
| >GPS reference time only       |      |       |  |   |         |
| >>GPS TOW msec                 | MP   |       | Integer(06.04<br>8*10 <sup>8</sup> -1) | GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit).                                      |         |
| UE Positioning GPS             | OP   |       | UE positioning                         |   | REL-7   |

| Information Element/Group name | Need | Multi                     | Type and Reference                                 | Semantics description   | Version |
|--------------------------------|------|---------------------------|--|---|---------|
| ReferenceTime Uncertainty      |      |                           | GPS reference<br>time<br>uncertainty<br>10.3.7.96a |   |         |
| Measurement Parameters         | MP   | 1 to<br><maxsat></maxsat> |  |   |         |
| >Satellite ID                  | MP   |                           | Enumerated(063)                                    | Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in [12].  |         |
| >C/N₀                          | MP   |                           | Integer(063)                                       | the estimate of the carrier-to-<br>noise ratio of the received<br>signal from the particular<br>satellite used in the<br>measurement. It is given in<br>units of dB-Hz (typical levels<br>will be in the range of 20 –<br>50 dB-Hz).                                  |         |
| >Doppler                       | MP   |                           | Integer(-<br>3276832768)                           | Hz, scale factor 0.2.   |         |
| >Whole GPS Chips               | MP   |                           | Integer(0102<br>2)                                 | Unit in GPS chips. Whole value of the UE GPS code-phase measurement, where increasing binary values of the field signify increasing measured pseudoranges. The UE GPS code-phase measurement is divided into the fields "Whole GPS Chips" and "Fractional GPS Chips". |         |
| >Fractional GPS Chips          | MP   |                           | Integer(0(2 <sup>10</sup> -1))                     | Scale factor 2 <sup>-10</sup> Fractional value of the UE GPS code-phase measurement.  |         |
| >Multipath Indicator           | MP   |                           | Enumerated(N<br>M, low,<br>medium, high)           | Note 1.   |         |
| >Pseudorange RMS Error         | MP   |                           | Enumerated(ra<br>nge index<br>0range index<br>63)  | Note 2.   |         |

NOTE 1: The following table gives the mapping of the multipath indicator field.

| Value  | Multipath Indication |
|--------|----------------------|
| NM     | Not measured         |
| Low    | MP error < 5m        |
| Medium | 5m < MP error < 43m  |
| High   | MP error > 43m       |

NOTE 2: The following table gives the bitmapping of the Pseudorange RMS Error field.

| Range<br>Index | Mantissa | Exponent | Floating-Point value, x <sub>i</sub> | Pseudorange value, P  |
|----------------|----------|----------|--------------------------------------|-----------------------|
| 0              | 000      | 000      | 0.5                                  | P < 0.5               |
| 1              | 001      | 000      | 0.5625                               | 0.5 <= P < 0.5625     |
| 1              | Х        | Υ        | 0.5 * (1 + x/8) * 2 <sup>y</sup>     | $x_{i-1} \le P < x_i$ |
| 62             | 110      | 111      | 112                                  | 104 <= P < 112        |
| 63             | 111      | 111      |                                      | 112 <= P              |

10.3.7.93a UE positioning GANSS measured results

| Information Element/Group name                         | Need | Multi                                    | Type and Reference                                | Semantics description  | Version |
|--|------|--|---|--|---------|
| CHOICE Reference Time                                  | MP   |  |   |  | REL-7   |
| >UTRAN reference time >>UE GANSS timing of cell frames | MP   |  | Integer(0<br>863999999<br>9750 by step<br>of 250) | GANSS Time of Day in ns  | REL-7   |
| >>GANSS Time Id  | OP   |  | INTEGER<br>(07)                                   | Absence means Galileo  |         |
| >>GANSS TOD Uncertainty                                | ОР   |  | Integer(012<br>7)                                 | Coding as in 10.3.7.96a  | REL-7   |
| >>CHOICE mode  | MP   |  | ,   |  | REL-7   |
| >>>FDD   |      |  |   |  | REL-7   |
| >>>Primary CPICH Info                                  | MP   |  | Primary<br>CPICH Info<br>10.3.6.60                | Identifies the reference cell for the GANSS TOD-SFN relationship.  | REL-7   |
| >>>TDD   |      |  |   |  | REL-7   |
| >>>cell parameters id                                  | MP   |  | Cell<br>parameters<br>id 10.3.6.9                 | Identifies the reference cell for the GANSS TOD-SFN relationship.  | REL-7   |
| >>Reference SFN  | MP   |  | Integer(040<br>95)                                | The SFN for which the location is valid. This IE indicates the SFN at which the UE timing of cell frames is captured.  | REL-7   |
| >GANSS reference time only                             |      |  |   |  | REL-7   |
| >>GANSS Time Id  | OP   |  | INTEGER<br>(07)                                   | Absence means Galileo  |         |
| >>GANSS TOD msec                                       | MP   |  | Integer(035<br>99999)                             | GANSS Time of Day (modulo 1 hour) in milliseconds (rounded down to the nearest millisecond unit).  | REL-7   |
| >>GANSS TOD Uncertainty                                | OP   |  | Integer(012<br>7)                                 | Coding as in 10.3.7.96a  | REL-7   |
| GANSS Generic Measurement<br>Information               | MP   | 1 to<br><maxgan<br>SS&gt;</maxgan<br>    |   |  | REL-7   |
| >GANSS ID  | OP   |  | Integer(07)                                       | Absence of this IE means Galileo Values 0-7 reserved for future use.   | REL-7   |
| >GANSS Signal Measurement Information                  | MP   | 1 to<br><maxsgnt<br>ype&gt;</maxsgnt<br> |   |  | REL-7   |
| >>GANSS Signal ID                                      | OP   |  | GANSS<br>Signal Id<br>10.3.3.45a                  | Absence of this field means<br>Galileo L1 OS if GANSS_ID<br>refers to Galileo.   | REL-7   |
| >>GANSS Code Phase Ambiguity                           | OP   |  | Integer (031)                                     | The GANSS Code Phase Ambiguity field gives the ambiguity of the code phase measurement. It is given in ms and is an integer between 0 and 31. The Total Code Phase for a satellite k (Satk) is given modulo this GANSS Code Phase Ambiguity and is reconstructed with: Code_Phase_Tot(Satk) = Code_Phase (Satk)+ Integer Code Phase(Satk) If there is no code phase ambiguity, the GANSS Code Phase Ambiguity shall be set to 0. The field is optional. If GANSS Code Phase Ambiguity is | REL-7   |

| Information Element/Group name    | Need | Multi                                    | Type and Reference                                | Semantics description  | Version |
|-----------------------------------|------|--|---|--|---------|
|                                   |      |  |   | absent, the default value is 1ms.  |         |
| >>GANSS Measurement<br>Parameters | MP   | 1 to<br><maxgan<br>SSSat&gt;</maxgan<br> |   |  | REL-7   |
| >>>Satellite ID                   | MP   |  | Integer<br>(063)                                  | Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in e.g. [61].  | REL-7   |
| >>>C/N <sub>o</sub>               | MP   |  | Integer(063                                       | the estimate of the carrier-to-<br>noise ratio of the received<br>signal from the particular<br>satellite used in the<br>measurement. It is given in<br>units of dB-Hz (typical levels<br>will be in the range of 20 – 50<br>dB-Hz).   | REL-7   |
| >>>Multipath Indicator            | MP   |  | Enumerated(<br>NM, low,<br>medium,<br>high)       | Coding as in 10.3.7.93   | REL-7   |
| >>>Carrier Quality Indicaton      | OP   |  | Bit string(2)                                     | Note 1   | REL-7   |
| >>>GANSS Code Phase               | MP   |  | Integer(02 <sup>21</sup> -1)                      | Scale factor 2 <sup>-21</sup> Code phase for the particular satellite signal at the time of measurement in the units of milliseconds. Increasing binary values of the field signify increasing measured pseudoranges. GNSS specific code phase measurements (e.g. chips) are converted into unit of ms by dividing the measurements by the nominal values of the measured signal chipping rate.  | REL-7   |
| >>>GANSS Integer Code Phase       | OP   |  | Integer(063                                       | In ms Indicates the integer millisecond part of the code phase, that is expressed modulo the GANSS Code Phase Ambiguity. The Integer code phase is optional, when it is not reported whereas the GANSS Code Phase Ambiguity is set to a certain value, this means that the mobile phone has no information about the integer code phase of the related satellite measurement. In this case, the code phase is reported modulo 1ms even if the GANSS Ambiguity indicates another value. | REL-7   |
| >>>Code Phase RMS Error           | MP   |  | Enumerated(<br>range index<br>0range<br>index 63) | Coding as in Note 2 of 10.3.7.93   | REL-7   |
| >>>Doppler                        | MP   |  | Integer(-<br>327683276<br>7)                      | m/s, scale factor 0.04. Doppler measured by the UE for the particular satellite signal   | REL-7   |
| >>>ADR                            | OP   |  | Integer(033<br>554431)                            | Meters, scale factor 2 <sup>-10</sup> ADR measurement measured by the UE for the particular satellite signal.  | REL-7   |

NOTE 2: Coding of Carrier quality indication:

| MSB | LSB | Explanation                  |
|-----|-----|------------------------------|
| 0   |     | Carrier phase not continuous |
| 1   |     | Carrier phase continuous     |
|     | 0   | Data direct                  |
|     | 1   | Data Inverted                |

#### 10.3.7.94 UE positioning GPS navigation model

This IE contain information required to manage the transfer of precise navigation data to the GPS-capable UE.

| Information Element/Group name                    | Need                       | Multi                     | Type and Reference  | Semantics description  |
|---|----------------------------|---------------------------|---|--|
| Satellite information                             | MP                         | 1 to<br><maxsat></maxsat> |   |  |
| >SatID  | MP                         |                           | Enumerated(<br>063)   | Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in [12]. |
| >Satellite Status                                 | MP                         |                           | Enumerated(<br>NS_NN,<br>ES_SN,<br>ES_NN,<br>REVD)                      | NOTE   |
| >GPS Ephemeris and Clock<br>Correction parameters | CV-<br>Satellite<br>status |                           | UE positioning GPS Ephemeris and Clock Correction parameters 10.3.7.91a |  |

NOTE: The UE shall interpret enumerated symbols as follows.

| Value | Indication                                |
|-------|---|
| NS_NN | New satellite, new Navigation Model       |
| ES_SN | Existing satellite, same Navigation Model |
| ES_NN | Existing satellite, new Navigation Model  |
| REVD  | Reserved                                  |

| Condition        | Explanation  |
|------------------|--|
| Satellite status | The IE is not needed if the IE "Satellite status" is |
|                  | ES_SN and mandatory present otherwise.               |

### 10.3.7.94a UE positioning GANSS navigation model

This IE contains information required to manage the transfer of precise navigation data to the GANSS-capable UE.

| Information Element/Group name | Need | Multi                                    | Type and Reference                                      | Semantics description   | Version |
|--------------------------------|------|--|---|---|---------|
| Non-Broadcast Indication       | OP   |  | Enumerated(<br>true)                                    | If this IE is present, GANSS navigation model is not derived from satellite broadcast | REL-7   |
| Satellite information          | MP   | 1 to<br><maxgan<br>SSSat&gt;</maxgan<br> |   |   | REL-7   |
| >SatID                         | MP   |  | Integer<br>(063)  | Identifies the satellite and is equal to (SV ID No - 1).                              | REL-7   |
| >SV Health                     | MP   |  | Bit string(5)   | NOTE  | REL-7   |
| >IOD                           | MP   |  | Bit string(10)  |   | REL-7   |
| >GANSS Clock Model             | MP   |  | UE<br>positioning<br>GANSS<br>clock model<br>10.3.7.91d |   | REL-7   |
| > GANSS Orbit Model            | MP   |  | UE<br>positioning<br>GANSS orbit<br>model<br>10.3.7.91c |   | REL-7   |

NOTE: The Health values are GNSS specific. For Galileo, the UE shall interpret bit string as follows:

| Parameter                 | Bit | Туре       | Explanation        |
|---------------------------|-----|------------|--------------------|
| E5a Data Validity Status  | 0   | Boolean    |                    |
| E5b Data Validity Status  | 1   | Boolean    |                    |
| E1-B Data Validity Status | 2   | Boolean    |                    |
| E5a Signal Health Status  | 3-4 | Bit string | See [61], Table 67 |

### 10.3.7.95 UE positioning GPS real-time integrity

This IE contains parameters that describe the real-time status of the GPS constellation.

| Information Element/Group | Need | Multi             | Type and    | Semantics description           |
|---------------------------|------|-------------------|-------------|---------------------------------|
| name                      |      |                   | Reference   |                                 |
| Satellite information     | MP   | 1 to              |             |                                 |
|                           |      | <maxsat></maxsat> |             |                                 |
| >BadSatID                 | MP   |                   | Enumerated( | Identifies the satellite and is |
|                           |      |                   | 063)        | equal to (SV ID No - 1) where   |
|                           |      |                   |             | SV ID No is defined in [12].    |

10.3.7.95a Void

#### 10.3.7.95b UE positioning GANSS real-time integrity

This IE contains parameters that describe the real-time status of the GANSS constellation.

| Information Element/Group name | Need | Multi                                    | Type and<br>Reference | Semantics description  | Version |
|--------------------------------|------|--|-----------------------|--|---------|
| Satellite information          | MP   | 1 to<br><maxgan<br>SSSat&gt;</maxgan<br> |                       |  | REL-7   |
| >Bad GANSS SatID               | MP   |  | Integer<br>(063)      | Identifies the satellite and is equal to (SV ID No - 1).                   | REL-7   |
| >Bad GANSS Signal ID           | OP   |  | Bit string (8)        | Absence of this IE means that all signals of the specific SV are bad. NOTE | REL-7   |

NOTE: Coding of Bad GANSS Signal ID

| GNSS    | Bit | Explanation |
|---------|-----|-------------|
| Galileo | 1   | L1          |
|         | 2   | E5A         |
|         | 3   | E5B         |
|         | 4   | E6          |
|         | 5   | E5A + E5B   |
|         | 6-8 | Spare       |

# 10.3.7.96 UE positioning GPS reference time

| Information Element/Group                    | Need | Multi | Type and   | Semantics description  | Version |
|--|------|-------|--|--|---------|
| name   |      |       | Reference  |  |         |
| GPS Week                                     | MP   |       | Integer(010<br>23)                                       |  |         |
| GPS TOW msec                                 | MP   |       | Integer(06.<br>048*10 <sup>8</sup> -1)                   | GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit). |         |
| UTRAN GPS reference time                     | OP   |       |  |  |         |
| >UTRAN GPS timing of cell frames             | MP   |       | Integer(0<br>2322431999<br>999)                          | UTRAN GPS timing of cell frames in steps of 1 chip                               |         |
| >CHOICE mode                                 | OP   |       |  |  |         |
| >>FDD  |      |       |  |  |         |
| >>>Primary CPICH Info                        | MP   |       | Primary<br>CPICH Info<br>10.3.6.60                       | Identifies the reference cell for<br>the GPS TOW-SFN<br>relationship             |         |
| >>TDD  |      |       |  |  |         |
| >>>cell parameters id                        | MP   |       | Cell<br>parameters<br>id 10.3.6.9                        | Identifies the reference cell for<br>the GPS TOW-SFN<br>relationship             |         |
| >SFN   | MP   |       | Integer(040<br>95)                                       | The SFN which the UTRAN GPS timing of cell frames time stamps.                   |         |
| UE Positioning GPS ReferenceTime Uncertainty | OP   |       | UE positioning GPS reference time uncertainty 10.3.7.96a | NOTE 1   | REL-7   |
| SFN-TOW Uncertainty                          | OP   |       | Enumerated (lessThan10,                                  | This field indicates the uncertainty of the relation GPS                         |         |

| Information Element/Group | Need | Multi             | Type and       | Semantics description           | Version |
|---------------------------|------|-------------------|----------------|---------------------------------|---------|
| name                      |      |                   | Reference      |                                 |         |
|                           |      |                   | moreThan10     | TOW/SFN. lessThan10 means       |         |
|                           |      |                   | )              | the relation is accurate to at  |         |
|                           |      |                   |                | least 10 ms. NOTE 1             |         |
| Tutran-gps drift rate     | OP   |                   | Integer (0, 1, | in 1/256 chips per sec.         |         |
|                           |      |                   | 2, 5, 10, 15,  |                                 |         |
|                           |      |                   | 25, 50, -1, -  |                                 |         |
|                           |      |                   | 2, -5, -10, -  |                                 |         |
|                           |      |                   | 15, -25, -50)  |                                 |         |
| GPS TOW Assist            | OP   | 1 to              |                |                                 |         |
|                           |      | <maxsat></maxsat> |                |                                 |         |
| >SatID                    | MP   |                   | Enumerated(    | Identifies the satellite and is |         |
|                           |      |                   | 063)           | equal to (SV ID No - 1) where   |         |
|                           |      |                   |                | SV ID No is defined in [12].    |         |
| >TLM Message              | MP   |                   | Bit string(14) |                                 |         |
| >TLM Reserved             | MP   |                   | Bit string(2)  |                                 |         |
| >Alert                    | MP   |                   | Boolean        |                                 |         |
| >Anti-Spoof               | MP   |                   | Boolean        |                                 |         |
|                           |      |                   |                |                                 |         |

NOTE 1: If the IE "UE Positioning GPS ReferenceTime Uncertainty" is present, the IE "SFN-TOW Uncertainty" is not needed and shall be ignored.

# 10.3.7.960 UE positioning GANSS reference time

| Information Element/Group          | Need | Multi | Type and  | Semantics description   | Version |
|------------------------------------|------|-------|---|---|---------|
| name                               |      |       | Reference   |   |         |
| GANSS Day                          | OP   |       | Integer(081<br>91)  | The sequential number of days from the origin of the GNSS system time indicated by GANSS Time ID modulo 8192 days (about 22 years). | REL-7   |
| GANSS TOD                          | MP   |       | Integer(086<br>399)   | GANSS Time of Day in seconds  | REL-7   |
| GANSS TOD Uncertainty              | OP   |       | Integer(012<br>7)   | Coding as in subclause 10.3.7.96a   | REL-7   |
| GANSS Time ID                      | OP   |       | Integer (07)  | Absense of this IE means<br>Galileo, values 0-7 are<br>reserved for future use  | REL-7   |
| UTRAN GANSS reference time         | OP   |       |   |   | REL-7   |
| >UTRAN GANSS timing of cell frames | MP   |       | Integer(0<br>999999750<br>by step of<br>250)  | UTRAN GANSS timing of cell<br>frames in steps of 250 ns.<br>Indicates sub-second part of<br>GANSS TOD                               | REL-7   |
| >CHOICE mode                       | MP   |       |   |   | REL-7   |
| >>FDD                              |      |       |   |   | REL-7   |
| >>>Primary CPICH Info              | MP   |       | Primary<br>CPICH Info<br>10.3.6.60  | Identifies the reference cell for<br>the GANSS TOD-SFN<br>relationship  | REL-7   |
| >>TDD                              |      |       |   | ·   | REL-7   |
| >>>cell parameters id              | MP   |       | Cell<br>parameters<br>id 10.3.6.9   | Identifies the reference cell for<br>the GANSS TOD-SFN<br>relationship  | REL-7   |
| >SFN                               | MP   |       | Integer(040<br>95)  | The SFN which the UTRAN GANSS timing of cell frames time stamps.  | REL-7   |
| Tutran-ganss drift rate            | OP   |       | ENUMERAT<br>ED (0, 1, 2,<br>5, 10, 15, 25,<br>50, -1, -2, -5,<br>-10, -15, -25,<br>-50) | in 1/256 chips per sec.<br>One spare value needed.  | REL-7   |

### 10.3.7.96a UE positioning GPS reference time uncertainty

| Information Element/Group name                   | Need | Multi | Type and reference | Semantics description  | Version |
|--|------|-------|--------------------|--|---------|
| UE Positioning GPS Reference<br>Time Uncertainty | MP   |       | Integer<br>(0127)  | This element provides the accuracy of the provided GPS time, or alternatively the accuracy of the provided relation between GPS and UTRAN time. If "GPS TOW" is the provided GPS time, or alternatively the GPS time corresponding to the UTRAN time provided, then the true GPS time lies in the interval ["GPS TOW" – "GPS Reference Time Uncertainty", "GPS TOW" + "GPS Reference Time Uncertainty", "GPS TOW" + "GPS Reference Time Uncertainty"]. The uncertainty $r$ , expressed in microseconds, is mapped to a number K with the following formula: $r = C^*(((1+x)^K)-1)$ with $C = 0.0022$ and $x = 0.18$ . To encode any higher value of the uncertainty than that corresponding to K=127 in the formula above, or to indicate an undefined value of the "GPS TOW", the same value, K=127, shall be used. | REL-7   |

NOTE: This IE is not needed in the SRNS RELOCATION INFO message.

### 10.3.7.97 UE positioning GPS UTC model

The UTC Model field contains a set of parameters needed to relate GPS time to Universal Time Coordinate (UTC).

| Information Element/Group | Need | Multi | Type and       | Semantics description |
|---------------------------|------|-------|----------------|-----------------------|
| name                      |      |       | Reference      |                       |
| A <sub>1</sub>            | MP   |       | Bit string(24) | sec/sec [12]          |
| A <sub>0</sub>            | MP   |       | Bit string(32) | seconds [12]          |
| t <sub>ot</sub>           | MP   |       | Bit string(8)  | seconds [12]          |
| WN <sub>t</sub>           | MP   |       | Bit string(8)  | weeks [12]            |
| $\Delta t_{LS}$           | MP   |       | Bit string(8)  | seconds [12]          |
| WN <sub>LSF</sub>         | MP   |       | Bit string(8)  | weeks [12]            |
| DN                        | MP   |       | Bit string(8)  | days [12]             |
| $\Delta t_{LSF}$          | MP   |       | Bit string(8)  | seconds [12]          |

# 10.3.7.97a UE positioning GANSS time model

The GANSS time model field contains a set of parameters needed to relate GANSS time to selected time reference indicated by GNSS\_TO\_ID.

| Information Element/Group name     | Need | Multi | Type and<br>Reference                           | Semantics description  | Version |
|------------------------------------|------|-------|---|--|---------|
| GANSS Time Model Reference<br>Time | MP   |       | Integer(060<br>4784 by step<br>of 16)           | GANSS reference time of<br>week for GANSS Time Model,<br>given in GNSS specific system<br>time, with a 16s scale factor. | REL-7   |
| T <sub>A0</sub>                    | MP   |       | Integer (-<br>2147483648<br><br>2147483647<br>) | Seconds, scale factor 2 <sup>-35</sup>   | REL-7   |
| T <sub>A1</sub>                    | OP   |       | Integer (-<br>8388608<br>8388607)               | sec/sec, scale factor 2 <sup>-51</sup>   | REL-7   |
| T <sub>A2</sub>                    | OP   |       | Integer (-64<br>63)                             | sec/sec <sup>2</sup> , scale factor 2 <sup>-68</sup>   | REL-7   |
| GNSS_TO_ID                         | MP   |       | Enumerated (GPS)                                | GNSS Time Offset ID<br>Seven spare values needed.  | REL-7   |
| Week Number                        | OP   |       | Integer(081<br>91)                              | Reference week of GANSS<br>Time Model given in GNSS<br>specific system time  | REL-7   |

### 10.3.7.97b UE positioning GANSS data bit assistance

This element provides data bit assistance data for specific satellite signals for data wipe-off.

| Information Element/Group name | Need | Multi                                    | Type and Reference               | Semantics description   | Version |
|--------------------------------|------|--|----------------------------------|---|---------|
| GANSS TOD                      | MP   |  | Integer(059                      | Refererence time (modulo 1 minute) of the first bit of the data in IE "Data Bits", in seconds   | REL-7   |
| Data Bit Assistance List       | MP   | 1 to<br><maxgan<br>SSSat&gt;</maxgan<br> |                                  | The following fields are present N_Sat times, with 1 ≤ N_Sat ≤ maxGANSSSat  | REL-7   |
| >Satellite ID                  | MP   |  | Integer<br>(063)                 |   | REL-7   |
| >Data bit assistance Sgn List  | MP   | 1 to<br><maxsgnt<br>ype&gt;</maxsgnt<br> |                                  | The following fields are present N_Sgn times, with 1 ≤ N_Sgn ≤ maxSgnType   | REL-7   |
| >>GANSS Signal ID              | MP   |  | GANSS<br>Signal ID<br>10.3.3.45a | Absence of this field means<br>Galileo L1 OS if GANSS_ID<br>refers to Galileo.  | REL-7   |
| >>Data Bits                    | MP   |  | Bit string (11024)               | Raw data bits as transmitted from a specific satellite at the time indicated by GANSS_TOD. In case of Galileo, it contains the FEC encoded and interleaved modulation symbols. The logical levels 1 and 0 correspond to signal levels -1 and +1, respectively. N_BIT is the actual number of elements in Data bits: 1 ≤ N BIT ≤ 1024. | REL-7   |

## 10.3.7.97c UE positioning GANSS UTC model

The UTC Model field contains a set of parameters needed to relate GANSS time to Universal Time Coordinate (UTC).

| Information Element/Group name | Need | Multi | Type and<br>Reference | Semantics description |
|--------------------------------|------|-------|-----------------------|-----------------------|
| A <sub>1</sub>                 | MP   |       | Bit string(24)        |                       |
| A <sub>0</sub>                 | MP   |       | Bit string(32)        |                       |
| t <sub>ot</sub>                | MP   |       | Bit string(8)         |                       |
| Δt <sub>LS</sub>               | MP   |       | Bit string(8)         |                       |
| WN <sub>t</sub>                | MP   |       | Bit string(8)         |                       |
| WN <sub>LSF</sub>              | MP   |       | Bit string(8)         |                       |
| DN                             | MP   |       | Bit string(8)         |                       |
| $\Delta t_{LSF}$               | MP   |       | Bit string(8)         |                       |

For a GANSS Id referring to Galileo, the definition and the unit of the elements are provided in [61].

## 10.3.7.98 UE positioning IPDL parameters

This IE contains parameters for the IPDL mode. The use of this parameters is described in [29].

| Information Element/Group name | Need           | Multi | Type and Reference                     | Semantics description | Version |
|--------------------------------|----------------|-------|--|-----------------------|---------|
| CHOICE mode                    |                |       |  |                       | REL-4   |
| >FDD                           |                |       |  |                       | REL-4   |
| >>IP spacing                   | MP             |       | Integer(5,7,1<br>0,15,20,30,4<br>0,50) | See [29]              |         |
| >>IP length                    | MP             |       | Integer(5,10)                          | See [29]              |         |
| >>IP offset                    | MP             |       | Integer(09)                            | See [29]              |         |
| >>Seed                         | MP             |       | Integer(063                            | See [29]              |         |
| >TDD                           |                |       |  |                       | REL-4   |
| >>IP spacing                   | MP             |       | Integer(30,4<br>0,50,70,100)           | See [33]              | REL-4   |
| >>IP_Start                     | MP             |       | Integer(040<br>95)                     | See [33]              | REL-4   |
| >>IP_Slot                      | MP             |       | Integer(014                            | See [33]              | REL-4   |
| >>IP_PCCPCH                    | CV-<br>channel |       | Boolean                                | See [33]              | REL-4   |
| Burst mode parameters          | OP             |       |  |                       |         |
| >Burst Start                   | MP             |       | Integer(015                            | See [29] and [33]     |         |
| >Burst Length                  | MP             |       | Integer(102<br>5)                      | See [29] and [33]     |         |
| >Burst freq                    | MP             |       | Integer(116                            | See [29] and [33]     |         |

| Condition | Explanation  |  |  |
|-----------|--|--|--|
| channel   | This IE is present only if the idle slot carries the |  |  |
|           | PCCPCH   |  |  |

# 10.3.7.99 UE positioning measured results

| Information Element/Group name        | Need | Multi | Type and reference  | Semantics description                     | Version |
|---------------------------------------|------|-------|---|---|---------|
| UE positioning OTDOA measured results | OP   |       | UE<br>positioning   |   |         |
|                                       |      |       | OTDOA<br>measured   |   |         |
|                                       |      |       | results<br>10.3.7.105   |   |         |
| UE positioning Position estimate info | OP   |       | UE positioning Position estimate info 10.3.7.109                |   |         |
| UE positioning GPS measured results   | OP   |       | UE positioning GPS measured results 10.3.7.93                   |   |         |
| UE positioning error                  | OP   |       | UE positioning error 10.3.7.87                                  | Included if UE positioning error occurred |         |
| UE positioning GANSS measured results | OP   |       | UE<br>positioning<br>GANSS<br>measured<br>results<br>10.3.7.93a |   | REL-7   |

# 10.3.7.100 UE positioning measurement

| Information Element/Group name                       | Need | Multi | Type and reference  | Semantics description | Version |
|--|------|-------|---|-----------------------|---------|
| UE positioning reporting quantity                    | MP   |       | UE positioning reporting quantity 10.3.7.111                    |                       |         |
| Measurement validity                                 | OP   |       | Measurem<br>ent validity<br>10.3.7.51                           |                       |         |
| CHOICE reporting criteria                            | MP   |       |   |                       |         |
| >UE positioning reporting criteria                   |      |       | UE positioning reporting criteria 10.3.7.110                    |                       |         |
| >Periodical reporting criteria                       |      |       | Periodical<br>reporting<br>criteria<br>10.3.7.53                |                       |         |
| >No reporting  |      |       |   | (no data)             |         |
| UE positioning OTDOA assistance data for UE-assisted | OP   |       | UE positioning OTDOA assistance data for UE-assisted 10.3.7.103 |                       |         |
| UE positioning OTDOA assistance data for UE-based    | OP   |       | UE<br>positioning   |                       |         |

| Information Element/Group     | Need | Multi | Type and    | Semantics description | Version |
|-------------------------------|------|-------|-------------|-----------------------|---------|
| name                          |      |       | reference   |                       |         |
|                               |      |       | OTDOA       |                       |         |
|                               |      |       | assistance  |                       |         |
|                               |      |       | data for    |                       |         |
|                               |      |       | UE-based    |                       |         |
|                               |      |       | 10.3.7.103  |                       |         |
|                               |      |       | а           |                       |         |
| UE positioning GPS assistance | OP   |       | UE          |                       |         |
| data                          |      |       | positioning |                       |         |
|                               |      |       | GPS         |                       |         |
|                               |      |       | assistance  |                       |         |
|                               |      |       | data        |                       |         |
|                               |      |       | 10.3.7.90   |                       |         |
| UE positioning GANSS          | OP   |       | UE          |                       | REL-7   |
| assistance data               |      |       | positioning |                       |         |
|                               |      |       | GANSS       |                       |         |
|                               |      |       | assistance  |                       |         |
|                               |      |       | data        |                       |         |
|                               |      |       | 10.3.7.90b  |                       |         |

### 10.3.7.101 UE positioning measurement event results

This IE contains the measurement event results that are reported to UTRAN for UE positioning measurements.

| Information Element/Group               | Need | Multi | Type and  | Semantics description      |
|---|------|-------|---|----------------------------|
| name                                    |      |       | Reference   |                            |
| CHOICE Event ID                         | MP   |       |   | One spare value is needed. |
| >7a                                     |      |       |   |                            |
| >>UE positioning Position estimate info | MP   |       | UE positioning Position estimate info 10.3.7.109                |                            |
| >7b                                     |      |       |   |                            |
| >>UE positioning OTDOA measured results | MP   |       | UE<br>positioning<br>OTDOA<br>measured<br>results<br>10.3.7.105 |                            |
| >7c                                     |      |       |   |                            |
| >>UE positioning GPS measurement        | MP   |       | UE positioning GPS measured results 10.3.7.93                   |                            |
| >7d                                     |      |       |   |                            |
| >>UE positioning GANSS measurement      | MP   |       | UE<br>positioning<br>GANSS<br>measured<br>results<br>10.3.7.93a |                            |

10.3.7.102 Void

## 10.3.7.103 UE positioning OTDOA assistance data for UE-assisted

| Information Element/Group  | Need | Multi                                      | Type and   | Semantics description |
|--|------|--|--|-----------------------|
| name   |      |  | Reference  |                       |
| UE positioning OTDOA reference cell info for UE-assisted         | OP   |  | UE<br>positioning<br>OTDOA<br>reference<br>cell info<br>10.3.7.108 |                       |
| UE positioning OTDOA<br>neighbour cell list for UE-<br>assisted  | OP   | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |  |                       |
| >UE positioning OTDOA<br>neighbour cell info for UE-<br>assisted | MP   |  | UE<br>positioning<br>OTDOA<br>neighbour<br>cell info<br>10.3.7.106 |                       |

## 10.3.7.103a UE positioning OTDOA assistance data for UE-based

| Information Element/Group                             | Need | Multi   | Type and          | Semantics description |
|---|------|---|-------------------|-----------------------|
| name  |      |   | Reference         |                       |
| UE positioning OTDOA reference cell info for UE-based | OP   |   | UE<br>positioning |                       |
| reference cell lillo for OL-based                     |      |   | OTDOA             |                       |
|   |      |   | reference         |                       |
|   |      |   | cell info for     |                       |
|   |      |   | UE-based          |                       |
|   |      |   | 10.3.7.108a       |                       |
| UE positioning OTDOA                                  | OP   | 1 to  |                   |                       |
| neighbour cell list for UE-based                      |      | <maxcellm< td=""><td></td><td></td></maxcellm<> |                   |                       |
|   |      | eas>  |                   |                       |
| >UE positioning OTDOA                                 | MP   |   | UE                |                       |
| neighbour cell info for UE-based                      |      |   | positioning       |                       |
|   |      |   | OTDOA             |                       |
|   |      |   | neighbour         |                       |
|   |      |   | cell info for     |                       |
|   |      |   | UE-based          |                       |
|   |      |   | 10.3.7.106a       |                       |

10.3.7.104 Void

## 10.3.7.105 UE positioning OTDOA measured results

| Information Element/Group name         | Need | Multi | Type and Reference                 | Semantics description                               |
|--|------|-------|------------------------------------|---|
| SFN                                    | MP   |       | Integer(040<br>95)                 | SFN during which the last measurement was performed |
| CHOICE mode                            |      |       |                                    |   |
| >FDD                                   |      |       |                                    |   |
| >>Reference cell id                    | MP   |       | Primary<br>CPICH info<br>10.3.6.60 |   |
| >>UE Rx-Tx time difference type 2 info | MP   |       |                                    |   |
| >>>UE Rx-Tx time difference type 2     | MP   |       | UE Rx-Tx<br>time<br>difference     |   |

| Information Element/Group name              | Need | Multi                                      | Type and Reference                                     | Semantics description   |
|---|------|--|--|---|
|   |      |  | type 2<br>10.3.7.84                                    |   |
| >>>UE positioning OTDOA quality             | MP   |  | UE positioning OTDOA quality 10.3.7.107                | Quality of the UE Rx-Tx time difference type 2 measurement from the reference cell.         |
| >TDD  |      |  |  | (no data)   |
| >>Reference cell id                         | MP   |  | Cell<br>parameters<br>ID 10.3.6.9                      |   |
| Neighbours                                  | OP   | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |  |   |
| >CHOICE mode                                | MP   |  |  |   |
| >>FDD                                       |      |  |  |   |
| >>>Neighbour Identity                       | MD   |  | Primary<br>CPICH info<br>10.3.6.60                     | Default value is the same as in the first set of multiple sets.                             |
| >>>Frequency info                           | MD   |  | Frequency info 10.3.6.36                               | Default value is the existing value of frequency information                                |
| >>>UE Rx-Tx time difference type 2 info     | OP   |  |  | Included for cell in the active set excluding the reference cell.                           |
| >>>UE Rx-Tx time difference type 2          | MP   |  | UE Rx-Tx<br>time<br>difference<br>type 2<br>10.3.7.84  |   |
| >>>UE positioning OTDOA quality             | MP   |  | UE<br>positioning<br>OTDOA<br>quality<br>10.3.7.107    | Quality of the UE Rx-Tx time difference type 2 measurement from the neighbour cell.         |
| >>TDD<br>>>>Cell and Channel ID             | MD   |  | Cell and   | Default value is the same as in   |
|   | MD   |  | Cell and<br>Channel<br>Identity info<br>10.3.6.8a      | the first set of multiple sets.   |
| >>>UARFCN                                   | MP   |  | Integer<br>(016383)                                    |   |
| >UE positioning OTDOA quality               | MP   |  | UE positioning OTDOA quality 10.3.7.107                | Quality of the SFN-SFN observed time difference type 2 measurement from the neighbour cell. |
| >SFN-SFN observed time<br>difference type 2 | MP   |  | SFN-SFN<br>observed<br>time<br>difference<br>10.3.7.63 | Gives the timing relative to the reference cell. Only type 2 is allowed.                    |

# 10.3.7.106 UE positioning OTDOA neighbour cell info

This IE gives approximate cell timing in order to decrease the search window.

| Information Element/Group name | Need | Multi | Type and Reference    | Semantics description |
|--------------------------------|------|-------|-----------------------|-----------------------|
| CHOICE mode                    | MP   |       |                       |                       |
| >FDD                           |      |       |                       |                       |
| >>Primary CPICH info           | MP   |       | Primary<br>CPICH info |                       |

| Information Element/Group name             | Need     | Multi | Type and Reference  | Semantics description   |
|--|----------|-------|---|---|
| >TDD                                       |          |       | 10.3.6.60   |   |
| >>cell and channel ID                      | MP       |       | Cell and<br>Channel<br>Identity info<br>10.3.6.8a   | Identifies the channel to be measured on.   |
| Frequency info                             | MD       |       | Frequency info 10.3.6.36  | Default value is the existing value of frequency information  |
| IPDL parameters                            | CV-IPDLs |       | UE positioning IPDL parameters 10.3.7.98  |   |
| SFN offset                                 | MP       |       | Integer (0<br>4095)   | Although this IE is not always required, need is MP to align with ASN.1.  Define Tref as the time of beginning of system frame number SFNref of the reference cell. Define Trc as the beginning of a frame from the neighbour cell occurring immediately after the time Tref. Let the corresponding system frame number be SFNnc. Then SFNnc = SFNref-SFN offset modulo 4096. |
| SFN offset validity                        | MD       |       | Enumerated (false)  | Absence of this element means SFN offset is valid. False means SFN offset is not valid.   |
| SFN-SFN relative time difference           | MP       |       | Integer(0<br>38399)   | Gives the relative timing compared to the reference cell. Equal to \( \) (Tnc-Tref)*(3.84*10^6) \( \) where \( \) denotes rounding to the nearest lower integer. In chips, Tnc = the time of beginning of a system frame from the neighbour cell, Tref = the time of beginning of a system frame from the reference cell.   |
| SFN-SFN drift                              | OP       |       | Integer (0, -<br>1, -2, -3, -4, -<br>5, -8, -10, -<br>15, -25, -35,<br>-50, -65, -80,<br>-100,<br>1, 2, 3, 4, 5,<br>8, 10, 15, 25,<br>35, 50, 65,<br>80, 100) | in 1/256 chips per second   |
| Search Window Size  CHOICE PositioningMode | MP<br>MP |       | Integer(20,<br>40, 80, 160,<br>320, 640,<br>1280,<br>infinity)  | In chips. If the value is X then the expected SFN-SFN observed time difference is in the range [RTD-X, RTD+X] where RTD is the value of the field SFN-SFN relative time difference.  Infinity means that the uncertainty is larger than 1280 chips.   |

| Information Element/Group name | Need | Multi | Type and<br>Reference | Semantics description |
|--------------------------------|------|-------|-----------------------|-----------------------|
| >UE based                      |      |       |                       | (no data)             |
| >UE assisted                   |      |       |                       | (no data)             |

| Condition | Explanation   |
|-----------|---|
| IPDLs     | This IE is mandatory present if IPDLs are applied and |
|           | not needed otherwise.                                 |

## 10.3.7.106a UE positioning OTDOA neighbour cell info for UE-based

This IE gives approximate cell timing in order to decrease the search window, as well as the cell locations and fine cell timing for UE based OTDOA.

| Information Element/Group name                        | Need       | Multi | Type and<br>Reference                                | Semantics description   | Version |
|---|------------|-------|--|---|---------|
| UE positioning OTDOA neighbour cell info              | MP         |       | UE<br>positioning<br>OTDOA                           |   |         |
|   |            |       | neighbour cell<br>info<br>10.3.7.106                 |   |         |
| Cell Position   | MD         |       |  | Default is the same as previous cell  |         |
| >Relative North                                       | OP         |       | Integer(-<br>2000020000<br>)                         | Seconds of angle, scale factor 0.03. Relative position compared to reference cell.        |         |
| >Relative East  | OP         |       | Integer(-<br>2000020000<br>)                         | Seconds of angle, scale factor 0.03. Relative position compared to reference cell.        |         |
| >Relative Altitude                                    | OP         |       | Integer(-<br>40004000)                               | Relative altitude in meters compared to ref. cell.  |         |
| Fine SFN-SFN  | MP         |       | Real(00.937<br>5 in steps of<br>0.0625)              | Gives finer resolution  |         |
| UE positioning Relative Time Difference Quality       | MP         |       | UE<br>positioning<br>OTDOA<br>quality<br>10.3.7.109a | Quality of the relative time difference between neighbour and reference cell.             |         |
| Round Trip Time                                       | OP         |       | Real (876.00<br>2923.875 in<br>steps of<br>0.0625)   | In chips. Included if cell is in active set.  |         |
| Round Trip Time Extension  NOTE: Total Round Trip Tir | CV-<br>FDD | 1.7.  | Real (0<br>4392.125 in<br>steps of<br>0.0625)        | In chips. Included if cell is in active set. Default = 0. NOTE.  nd Trip Time Extension". | REL-7   |

| Condition | Explanation  |
|-----------|--|
| FDD       | The IE is optionally present in FDD, otherwise it is not |
|           | needed.  |

## 10.3.7.107 UE positioning OTDOA quality

| Information Element/Group | Need | Multi | Type and      | Semantics description   |
|---------------------------|------|-------|---------------|---|
| name                      |      |       | Reference     |   |
| Std Resolution            | MP   |       | Bit string(2) | Std Resolution field includes<br>the resolution used in Std of<br>OTDOA Measurements field. |

| Information Element/Group name | Need | Multi | Type and Reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
|                                |      |       |                    | Encoding on two bits as follows:  '00' 10 meters  '01' 20 meters  '10' 30 meters  '11' Reserved  |
| Number of OTDOA Measurements   | MP   |       | Bit string(3)      | The 'Number of OTDOA measurements' field indicates how many OTDOA measurements have been used in the UE to determine the sample standard deviation of the measurements. Following 3 bit encoding is used: '001' 5-9 '010' 10-14 '011' 15-24 '100' 25-34 '101' 35-44 '110' 45-54 '111' 55 or more Special case: '000':In this case the field 'Std of OTDOA measurements' contains the std of the reported SFN-SFN otd value = $\sqrt{E[(x-\mu)^2]}$ , where x is the reported value and $\mu = E[x]$ is the expectation value (i.e. the true value) of x. This std can be used irrespective of the number of measurements and reporting of the number of measurements is not needed. Also other measurements such as Ec/No or Rx levels can be utilised in this case to evaluate the 'Std of OTDOA measurements' reported in this IE. |

| Information Element/Group name | Need | Multi | Type and<br>Reference | Semantics description   |
|--------------------------------|------|-------|-----------------------|---|
| Std of OTDOA Measurements      | MP   |       | Bit string(5)         | Std of OTDOA Measurements field includes sample standard deviation of OTDOA measurements (when number of measurements (when number of measurements is reported in 'Number of OTDOA measurements field') or standard deviation of the reported SFN-SFN otd value = $\sqrt{E[(x-\mu)^2]}$ , where x is the reported value and $\mu = E[x]$ is the expectation value (i.e. the true value) of x (when '000' is given in 'Number of OTDOA measurements' field). Following linear 5 bit encoding is used: '00000' 0 - (R*1-1) meters '00001' R*1 - (R*2-1) meters '00010' R*2 - (R*3-1) meters |
|                                |      |       |                       | '11111' R*31 meters or more where R is the resolution defined by Std Resolution field. E.g. R=20 m corresponds to 0-19 m, 20-39 m,,620+ m.  |

# 10.3.7.108 UE positioning OTDOA reference cell info

This IE defines the cell used for time references in all OTDOA measurements.

| Information Element/Group name | Need | Multi | Type and Reference                                   | Semantics description  |
|--------------------------------|------|-------|--|--|
| SFN                            | OP   |       | Integer<br>(04095)                                   | Time stamp (SFN of<br>Reference Cell) of the SFN-<br>SFN relative time differences<br>and SFN-SFN drift rates.<br>Included if any SFN-SFN drift<br>value is included in IE UE<br>positioning OTDOA neighbour<br>cell info. |
| CHOICE mode                    | MP   |       |  |  |
| >FDD                           |      |       |  |  |
| >>Primary CPICH info           | MP   |       | Primary<br>CPICH info<br>10.3.6.60                   |  |
| >TDD                           |      |       |  |  |
| >>cell and channel ID          | MP   |       | Cell and<br>Channel<br>Identity info<br>10.3.6.8a    | Identifies the channel to be measured on.  |
| Frequency info                 | MD   |       | Frequency<br>info<br>10.3.6.36                       | Default value is the existing value of frequency information. This IE shall always be set to default value   |
| CHOICE PositioningMode         | MP   |       |  |  |
| >UE based                      |      |       |  |  |
| >UE assisted                   |      |       |  | (no data)  |
| IPDL parameters                | OP   |       | UE<br>positioning<br>IPDL<br>parameters<br>10.3.7.98 | If this element is not included there are no idle periods present  |

# 10.3.7.108a UE positioning OTDOA reference cell info for UE-based

This IE defines the cell used for time references in all OTDOA measurements for UE-based methods.

| Information Element/Group name           | Need       | Multi     | Type and<br>Reference  | Semantics description  | Version |
|--|------------|-----------|--|--|---------|
| UE positioning OTDOA reference cell info | MP         |           | UE<br>positioning<br>OTDOA<br>reference cell<br>info<br>10.3.7.108 |  |         |
| CHOICE Cell Position                     | OP         |           |  | The position of the antenna that defines the cell. Used for the UE based method. |         |
| >Ellipsoid                               |            |           |  |  |         |
| >>Ellipsoid point                        | MP         |           | Ellipsoid point 10.3.8.4a  |  |         |
| >Ellipsoid with altitude                 |            |           |  |  |         |
| >>Ellipsoid point with altitude          | MP         |           | Ellipsoid point with altitude 10.3.8.4b                            |  |         |
| Round Trip Time                          | OP         |           | Real (876.00<br>2923.875 in<br>steps of<br>0.0625)                 | In chips.  |         |
| Round Trip Time Extension                | CV-<br>FDD |           | Real (0<br>4392.125 in<br>steps of<br>0.0625)                      | In chips. Default = 0.<br>NOTE.  | REL-7   |
| NOTE: Total Round Trip Tir               | ne = IE "R | ound Trip | Time" + IE "Rour   | nd Trip Time Extension".   |         |

| Condition | Explanation  |  |  |
|-----------|--|--|--|
| FDD       | The IE is optionally present in FDD, otherwise it is not |  |  |
|           | needed.  |  |  |

## 10.3.7.109 UE positioning position estimate info

The purpose of this IE is to provide the position estimate from the UE to the network, if the UE is capable of determining its own position.

| Information Element/Group      | Need | Multi | Type and                           | Semantics description   | Version |
|--------------------------------|------|-------|------------------------------------|---|---------|
| name                           |      |       | Reference                          |   |         |
| CHOICE Reference Time          | MP   |       |                                    |   |         |
| >UTRAN GPS reference time      |      |       |                                    |   |         |
| >>UE GPS timing of cell frames | MP   |       | Integer(0<br>3715891199<br>9999)   | GPS Time of Week in units of 1/16 <sup>th</sup> UMTS chips according to [19]. 33209832177664 spare values are needed. |         |
| >>CHOICE mode                  | MP   |       |                                    |   |         |
| >>>FDD                         |      |       |                                    |   |         |
| >>>Primary CPICH Info          | MP   |       | Primary<br>CPICH Info<br>10.3.6.60 | Identifies the reference cell for<br>the GPS TOW-SFN<br>relationship  |         |
| >>>TDD                         |      |       |                                    |   |         |
| >>cell parameters id           | MP   |       | Cell<br>parameters<br>id 10.3.6.9  | Identifies the reference cell for the GPS TOW-SFN relationship.   |         |
| >>Reference SFN                | MP   |       | Integer(040<br>95)                 | The SFN for which the location is valid. This IE indicates the SFN at which the UE timing of cell frame is captured.  |         |
| >GPS reference time only       |      |       |                                    |   |         |

| Information Element/Group name            | Need | Multi | Type and Reference   | Semantics description  | Version |
|---|------|-------|--|--|---------|
| >>GPS TOW msec                            | MP   |       | Integer(06.<br>048*10 <sup>8</sup> -1)                         | GPS Time of Week in milliseconds (rounded down to the nearest millisecond unit).                                     |         |
| >Cell timing                              |      |       |  | the flearest filmeseeria unity.  |         |
| >>SFN                                     | MP   |       | Integer(040<br>95)   | SFN during which the position was calculated.  |         |
| >>CHOICE mode                             | MP   |       |  |  |         |
| >>>FDD                                    |      |       |  |  |         |
| >>>Primary CPICH Info >>>TDD              | MP   |       | Primary<br>CPICH Info<br>10.3.6.60                             | Identifies the reference cell for SFN  |         |
| >>cell parameters id                      | MP   |       | Cell   | Identifies reference cell for  |         |
| >>ceii parameters iu                      | IVIP |       | parameters<br>id 10.3.6.9                                      | SFN  |         |
| >UTRAN GANSS reference time               |      |       |  |  | REL-7   |
| >>UE GANSS timing of cell frames          | MP   |       | Integer(0<br>8639999999<br>9750 by step<br>of 250)             | GANSS Time of Day in ns  | REL-7   |
| >>GANSS Time ID                           | OP   |       | Integer(07)  | 0-7: Reserved for future use<br>Absence of this field means<br>Galileo   | REL-7   |
| >>GANSS TOD Uncertainty                   | OP   |       | Integer(012<br>7)  | Coding as in 10.3.7.96a  | REL-7   |
| >>CHOICE mode                             | MP   |       |  |  | REL-7   |
| >>>FDD                                    |      |       |  |  | REL-7   |
| >>>Primary CPICH Info                     | MP   |       | Primary<br>CPICH Info<br>10.3.6.60                             | Identifies the reference cell for<br>the GANSS TOD-SFN<br>relationship   | REL-7   |
| >>>TDD                                    |      |       |  |  | REL-7   |
| >>>cell parameters id                     | MP   |       | Cell<br>parameters<br>id 10.3.6.9                              | Identifies the reference cell for<br>the GANSS TOD-SFN<br>relationship.  | REL-7   |
| >>Reference SFN                           | MP   |       | Integer(040<br>95)   | The SFN for which the location is valid. This IE indicates the SFN at which the UE timing of cell frame is captured. | REL-7   |
| >GANSS reference time only                |      |       |  |  | REL-7   |
| >>GANSS TOD msec                          | MP   |       | Integer(035<br>99999)  | GANSS Time of Day in milliseconds (rounded down to the nearest millisecond unit).                                    | REL-7   |
| >>GANSS Time ID                           | OP   |       | Integer(07)  | 0-7: Reserved for future use<br>Absence of this field means<br>Galileo   | REL-7   |
| CHOICE Position estimate                  | MP   |       |  |  |         |
| >Ellipsoid Point                          |      |       | Ellipsoid<br>Point;<br>10.3.8.4a                               |  |         |
| >Ellipsoid point with uncertainty circle  |      |       | Ellipsoid<br>point with<br>uncertainty<br>circle<br>10.3.8.4d  |  |         |
| >Ellipsoid point with uncertainty ellipse |      |       | Ellipsoid<br>point with<br>uncertainty<br>ellipse<br>10.3.8.4e |  |         |
| >Ellipsoid point with altitude            |      |       | Ellipsoid<br>point with<br>altitude<br>10.3.8.4b               |  |         |

| Information Element/Group name                           | Need              | Multi | Type and Reference   | Semantics description   | Version |
|--|-------------------|-------|--|---|---------|
| >Ellipsoid point with altitude and uncertainty ellipsoid |                   |       | Ellipsoid<br>point with<br>altitude and<br>uncertainty<br>ellipsoid<br>10.3.8.4c |   |         |
| Position Data  | MP                |       | Bit string(16)   | For each bit, if set to '1', indicates that respective GNSS or position system was used for position calculation. Bit 0: OTDOA bit 1: GPS bit 2: Galileo bit 3-15: reserved | REL-7   |
| CHOICE Velocity estimate                                 | OP                |       |  |   | REL-7   |
| >Horizontal Velocity                                     |                   |       | Horizontal<br>Velocity<br>10.3.8.4h  |   | REL-7   |
| >Horizontal with Vertical Velocity                       |                   |       | Horizontal<br>with Vertical<br>Velocity<br>10.3.8.4i                             |   | REL-7   |
| >Horizontal Velocity with<br>Uncertainty                 |                   |       | Horizontal<br>Velocity with<br>Uncertainty<br>10.3.8.4j                          |   | REL-7   |
| >Horizontal with Vertical Velocity and Uncertainty       |                   |       | Horizontal with Vertical Velocity and Uncertainty 10.3.8.4k                      |   | REL-7   |
| UE Positioning GPS ReferenceTime Uncertainty             | CV-Tutran-<br>gps |       | UE positioning GPS reference time uncertainty 10.3.7.96a                         |   | REL-7   |

| Condition  | Explanation   |
|------------|---|
| Tutran-gps | This IE is optionally present if "UTRAN GPS           |
|            | reference time" is included and not needed otherwise. |

# 10.3.7.109a UE positioning Relative Time Difference quality

| Information Element/Group       | Need | Multi | Type and      | Semantics description           |
|---------------------------------|------|-------|---------------|---------------------------------|
| name                            |      |       | Reference     |                                 |
| Relative Time Difference Std    | MP   |       | Bit string(2) | Std Resolution field includes   |
| Resolution                      |      |       |               | the resolution used in Std of   |
|                                 |      |       |               | Relative Time Difference field. |
|                                 |      |       |               | Encoding on two bits as         |
|                                 |      |       |               | follows:                        |
|                                 |      |       |               | '00' 10 meters                  |
|                                 |      |       |               | '01' 20 meters                  |
|                                 |      |       |               | '10' 30 meters                  |
|                                 |      |       |               | '11' Reserved                   |
| Std of Relative Time Difference | MP   |       | Bit string(5) | Std of Relative Time difference |
|                                 |      |       |               | field includes standard         |
|                                 |      |       |               | deviation of (SFN-SFN relative  |
|                                 |      |       |               | time difference + Fine SFN-     |
|                                 |      |       |               | SFN). Following linear 5 bit    |
|                                 |      |       |               | encoding is used:               |
|                                 |      |       |               | '00000' 0 - (R*1-1) meters      |
|                                 |      |       |               | '00001' R*1 – (R*2-1) meters    |
|                                 |      |       |               | '00010' R*2 – (R*3-1) meters    |
|                                 |      |       |               |                                 |
|                                 |      |       |               | '11111' R*31 meters or more     |
|                                 |      |       |               | where R is the resolution       |
|                                 |      |       |               | defined by Std Resolution       |
|                                 |      |       |               | field. E.g. R=20 m corresponds  |
|                                 |      |       |               | to 0-19 m, 20-39 m,,620+ m.     |

## 10.3.7.110 UE positioning reporting criteria

The triggering of the event-triggered reporting for a UE positioning measurement.

| Information Element/Group name      | Need | Multi                                      | Type and Reference  | Semantics description   | Version |
|-------------------------------------|------|--|---|---|---------|
| Parameters required for each event  | MP   | 1 to<br><maxmeas<br>Event&gt;</maxmeas<br> |   | Note: need corrected to MP in Rel-7 to align with ASN.1.  |         |
| >Amount of reporting                | MP   |  | Integer(1,<br>2, 4, 8, 16,<br>32,<br>64,infinite)   |   |         |
| >Report first fix                   | MP   |  | Boolean   | If true the UE reports the position once the measurement control is received, and then each time an event is triggered.                             |         |
| >Measurement interval               | MP   |  | Integer(5,1<br>5,60,300,9<br>00,1800,36<br>00,7200)   | Indicates how often the UE should make the measurement In seconds   |         |
| >CHOICE Event ID                    | MP   |  | ,   |   |         |
| >>7a >>>Threshold Position Change   | MP   |  | Integer(10,<br>20,30,40,5<br>0,100,200,<br>300,500,10<br>00,2000,50<br>00,10000,2<br>0000,5000<br>0,100000) | Meters. Indicated how much the position should change compared to last reported position fix in order to trigger the event.                         |         |
| >>7b<br>>>>Threshold SFN-SFN change | MP   |  | Real(0.25,<br>0.5,1,2,3,4,<br>5,10,20,50,<br>100,200,50<br>0,1000,200<br>0,5000)                            | Chips. Indicates how much<br>the SFN-SFN measurement<br>of ANY measured cell is<br>allowed to change before the<br>event is triggered.              |         |
| >>7c<br>>>>Threshold SFN-GPS TOW    | MP   |  | Integer(1,2<br>,3,5,10,20,<br>50,100)   | Time in ms. When the GPS TOW and SFN timer has drifted apart more than the specified value the event is triggered.  Time in micro seconds (NOTE 1). | REL-7   |
| >>7d                                |      |  |   |   | REL-7   |
| >>>Threshold SFN-GANSS<br>TOW       | MP   |  | Integer(1,2<br>,3,5,10,20,<br>50,100)   | Time in micro seconds. When the GANSS TOW and SFN timer has drifted apart more than the specified value the event is triggered.                     | REL-7   |

NOTE 1: In previous versions of the protocol, the IE "Threshold SFN-GPS TOW" was provided in units of milli seconds. If the information is provided in units of micro seconds, the UE shall ignore any information provided in units of milli seconds.

## 10.3.7.111 UE positioning reporting quantity

The purpose of the element is to express the allowed/required location method(s), and to provide information desired QoS.

| Information Element/Group | Need | Multi | Type and     | Semantics description | Version |
|---------------------------|------|-------|--------------|-----------------------|---------|
| name                      |      |       | Reference    |                       |         |
| Method Type               | MP   |       | Enumerated(  |                       |         |
|                           |      |       | UE assisted, |                       |         |
|                           |      |       | UE based,    |                       |         |

| Information Element/Group name | Need      | Multi | Type and Reference | Semantics description                                    | Version |
|--------------------------------|-----------|-------|--------------------|--|---------|
| name                           |           |       | UE based is        |  |         |
|                                |           |       | preferred but      |  |         |
|                                |           |       | UE assisted        |  |         |
|                                |           |       |                    |  |         |
|                                |           |       | is allowed,        |  |         |
|                                |           |       | UE assisted        |  |         |
|                                |           |       | is preferred       |  |         |
|                                |           |       | but UE             |  |         |
|                                |           |       | based is           |  |         |
|                                |           |       | allowed)           |  |         |
| Positioning Methods            | MP        |       | Enumerated(        |  |         |
|                                |           |       | OTDOA,             |  |         |
|                                |           |       | GPS,               |  |         |
|                                |           |       | OTDOA or           |  |         |
|                                |           |       | GPS, Cell          |  |         |
|                                |           |       | ID)                |  |         |
| Response Time                  | MP        |       | Integer(1,2,4      | This IE shall be ignored.                                |         |
| responde rimo                  | '''       |       | , 8, 16, 32,       | Trile in criain be ignored.                              |         |
|                                |           |       | 64, 128)           |  |         |
| Horizontal Accuracy            | CV-       |       |                    | The uncertainty is derived from                          |         |
| Horizontal Accuracy            |           |       | Bit string(7)      |  |         |
|                                | MethodTyp |       |                    | the "uncertainty code" k by                              |         |
|                                | e         |       |                    | $r = 10*(1.1^k-1)$ in meters.                            |         |
| Vertical Accuracy              | CV-       |       | Bit string(7)      | The uncertainty is derived from                          |         |
|                                | MethodTyp |       |                    | the "uncertainty code" k by                              |         |
|                                | е         |       |                    | $r = 45*(1.025^k-1)$ in meters.                          |         |
| GPS timing of Cell wanted      | MP        |       | Boolean            | If true the SRNC wants the UE                            |         |
|                                |           |       |                    | to report the SFN-GPS timing                             |         |
|                                |           |       |                    | of the reference cell. This is                           |         |
|                                |           |       |                    | however optional in the UE.                              |         |
| Multiple Sets                  | MP        |       | Boolean            | This IE shall be ignored.                                |         |
| Additional Assistance Data     | MP        |       | Boolean            | TRUE indicates that the UE is                            |         |
| Request                        | IVII      |       | Doolcan            | requested to send the IE                                 |         |
| Request                        |           |       |                    | "Additional assistance Data                              |         |
|                                |           |       |                    |  |         |
|                                |           |       |                    | Request" when the IE "UE                                 |         |
|                                |           |       |                    | positioning Error" is present in                         |         |
|                                |           |       |                    | the UE positioning measured                              |         |
|                                |           |       |                    | results. FALSE indicates that                            |         |
|                                |           |       |                    | the UE shall use the                                     |         |
|                                |           |       |                    | assistance data available.                               |         |
| Environment Characterisation   | OP        |       | Enumerated(        | One spare value is needed.                               |         |
|                                |           |       | possibly           | ·  |         |
|                                |           |       | heavy              |  |         |
|                                |           |       | multipath          |  |         |
|                                |           |       | and NLOS           |  |         |
|                                |           |       | conditions,        |  |         |
|                                |           |       | no or light        |  |         |
|                                |           |       |                    |  |         |
|                                |           |       | multipath          |  |         |
|                                |           |       | and usually        |  |         |
|                                |           |       | LOS                |  |         |
|                                |           |       | conditions,        |  |         |
|                                |           |       | not defined        |  |         |
|                                |           |       | or mixed           |  |         |
|                                |           |       | environment)       |  |         |
|                                | i e       |       | 1                  |  |         |
|                                |           |       |                    |  |         |
| Velocity Requested             | OP        |       | Enumerated         | If this element is present the                           | REL-7   |
| Velocity Requested             | OP        |       | Enumerated (TRUE)  | If this element is present the UE is requested to send a | REL-7   |

| Information Element/Group name               | Need | Multi | Type and Reference | Semantics description   | Version |
|--|------|-------|--------------------|---|---------|
| GANSS Positioning Methods                    | OP   |       | Bit string(16)     | For each bit, if set to '1', indicates that respective GNSS is allowed. bit 0: GPS bit 1: Galileo bit 2-15: reserved for future GNSSes  | REL-7   |
| GANSS timing of Cell wanted                  | OP   |       | Bit string(8)      | Each bit refers to a GANSS. Bit 0 is for Galileo. Other bits are reserved. If one bit is set to one the SRNC wants the UE to report the SFN-GANSS timing of the reference cell. This is however optional in the UE. | REL-7   |
| GANSS Carrier-Phase<br>Measurement Requested | OP   |       | Bit string(8)      | Each bit refers to a GANSS. Bit 0 is for Galileo. Other bits are reserved. This is however optional in the UE.  | REL-7   |

| Condition   | Explanation                                       |
|-------------|---|
| Method Type | The IE is optional if the IE "Method Type" is "UE |
|             | assisted"; otherwise it is mandatory present.     |

NOTE 1: Bit 0 of this bitmap shall not be the only one set to 1.

## 10.3.7.112 $T_{ADV}$ info

NOTE: Only for 1.28 Mcps TDD.

 $T_{ADV}$  indicates the difference between the Rx timing and Tx timing of a UE.

| Information Element/group name | Need | Multi | Type and reference | Semantics description  | Version |
|--------------------------------|------|-------|--------------------|--|---------|
| T <sub>ADV</sub>               | MP   |       | Integer<br>(02047, | As defined in [20].  | REL-4   |
|                                |      |       | 20488191)          |  | REL-7   |
| SFN                            | MP   |       | Integer(040<br>95) | SFN during which the T <sub>ADV</sub> measurement was performed. | REL-4   |

## 10.3.8 Other Information elements

#### 10.3.8.1 BCCH modification info

Indicates modification of the System Information on BCCH.

| Information Element/Group name | Need | Multi | Type and reference                  | Semantics description                                  |
|--------------------------------|------|-------|-------------------------------------|--|
| MIB Value tag                  | MP   |       | MIB Value<br>tag 10.3.8.9           |  |
| BCCH modification time         | OP   |       | Integer (0<br>4088 in step<br>of 8) | All SFN values in which MIB may be mapped are allowed. |

## 10.3.8.2 BSIC

| Information Element/Group                     | Need | Multi | Type and      | Semantics description  |
|---|------|-------|---------------|--|
| name  |      |       | reference     |  |
| Base transceiver Station Identity Code (BSIC) | MP   |       |               | [11]   |
| >Network Colour Code (NCC)                    | MP   |       | bit string(3) | The first/leftmost bit of the bit string contains the most significant bit of the NCC. |
| >Base Station Colour Code (BCC)               | MP   |       | bit string(3) | The first/leftmost bit of the bit string contains the most significant bit of the BCC. |

#### 10.3.8.3 CBS DRX Level 1 information

This information element contains the CBS discontinuous reception information to be broadcast for CBS DRX Level 1 calculations in the UE.

| Information Element/Group name        | Need    | Multi | Type and reference                         | Semantics description                             | Version |
|---------------------------------------|---------|-------|--|---|---------|
| Period of CTCH allocation (N)         | MP      |       | Integer<br>(1256)                          | $M_{TTI} \le N \le 256$ , N multiple of $M_{TTI}$ |         |
| CBS frame offset (K)                  | MP      |       | Integer<br>(0255)                          | $0 \le K \le N-1$ ,<br>K multiple of $M_{TTI}$    |         |
| Period of BMC scheduling messages (P) | CV-SIB5 |       | Integer<br>(8, 16, 32,<br>64, 128,<br>256) |   | REL-6   |

| Condition | Explanation  |
|-----------|--|
| SIB5      | The IE is optional when the IE "CBS DRX Level 1      |
|           | information" in SIB5, otherwise the IE is not needed |

## 10.3.8.4 Cell Value tag

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Cell Value tag                 | MP   |       | Integer (14)       |                       |

## 10.3.8.4a Ellipsoid point

This IE contains the description of an ellipsoid point as in [24].

| Information Element/Group name | Need | Multi | Type and Reference                                | Semantics description   |
|--------------------------------|------|-------|---|---|
| Latitude sign                  | MP   |       | Enumerated (North, South)                         |   |
| Degrees Of Latitude            | MP   |       | Integer<br>(02 <sup>23</sup> -1)                  | The IE value ( $N$ ) is derived by this formula: $N \le 2^{23} X/90 < N+1$ $X$ being the latitude in degree (0° 90°)  |
| Degrees Of Longitude           | MP   |       | Integer (-<br>2 <sup>23</sup> 2 <sup>23</sup> -1) | The IE value ( <i>N</i> ) is derived by this formula: <i>N</i> ≤2 <sup>24</sup> <i>X</i> /360 < <i>N</i> +1 <i>X</i> being the longitude in degree (-180°+180°) |

# 10.3.8.4b Ellipsoid point with Altitude

This IE contains the description of an ellipsoid point with altitude as in [24].

| Information Element/Group | Need | Multi | Type and                            | Semantics description                                 |
|---------------------------|------|-------|-------------------------------------|---|
| name                      |      |       | Reference                           |   |
| Latitude sign             | MP   |       | Enumerated                          |   |
|                           |      |       | (North,                             |   |
|                           |      |       | South)                              |   |
| Degrees Of Latitude       | MP   |       | Integer                             | The IE value (N) is derived by                        |
|                           |      |       | (02 <sup>23</sup> -1)               | this formula:   |
|                           |      |       | (02 1)                              | $N \le 2^{23} X/90 < N+1$                             |
|                           |      |       |                                     | X being the latitude in degree                        |
|                           |      |       |                                     | (0° 90°)  |
| Degrees Of Longitude      | MP   |       | Integer (-                          | The IE value (N) is derived by                        |
|                           |      |       | 2 <sup>23</sup> 2 <sup>23</sup> -1) | this formula:   |
|                           |      |       | 22 1)                               | <i>N</i> ≤2 <sup>24</sup> <i>X</i> /360 < <i>N</i> +1 |
|                           |      |       |                                     | X being the longitude in                              |
|                           |      |       |                                     | degree (-180°+180°)                                   |
| Altitude Direction        | MP   |       | Enumerated                          | ,   |
|                           |      |       | (Height,                            |   |
|                           |      |       | Depth)                              |   |
| Altitude                  | MP   |       | Integer                             | The IE value (N) is derived by                        |
|                           |      |       | (02 <sup>15</sup> -1)               | this formula:   |
|                           |      |       | (02 1)                              | <i>N</i> ≤a < <i>N</i> +1                             |
|                           |      |       |                                     | a being the altitude in metres                        |

## 10.3.8.4c Ellipsoid point with Altitude and uncertainty ellipsoid

This IE contains the description of an ellipsoid point with altitude and uncertainty ellipsoid as in [24].

| Information Element/Group name | Need | Multi | Type and Reference                                | Semantics description   |
|--------------------------------|------|-------|---|---|
| Latitude sign                  | MP   |       | Enumerated (North, South)                         |   |
| Degrees Of Latitude            | MP   |       | Integer (02 <sup>23</sup> -1)                     | The IE value ( $N$ ) is derived by this formula:<br>$N \le 2^{23} X/90 < N+1$<br>X being the latitude in degree (0° 90°)  |
| Degrees Of Longitude           | MP   |       | Integer (-<br>2 <sup>23</sup> 2 <sup>23</sup> -1) | The IE value ( <i>N</i> ) is derived by this formula: <i>N</i> ≤2 <sup>24</sup> <i>X</i> /360 < <i>N</i> +1 <i>X</i> being the longitude in degree (-180°+180°) |
| Altitude Direction             | MP   |       | Enumerated<br>(Height,<br>Depth)                  |   |
| Altitude                       | MP   |       | Integer<br>(02 <sup>15</sup> -1)                  | The IE value ( <i>N</i> ) is derived by this formula: <i>N</i> ≤ <i>a</i> < <i>N</i> +1 <i>a</i> being the altitude in metres                                   |
| Uncertainty semi-major         | MP   |       | Integer<br>(0127)                                 | The uncertainty $r$ is derived from the "uncertainty code" $k$ by $r = 10x(1.1^k-1)$  |
| Uncertainty semi-minor         | MP   |       | Integer<br>(0127)                                 | The uncertainty $r$ is derived from the "uncertainty code" $k$ by $r = 10x(1.1^{k}-1)$  |

| Information Element/Group name | Need | Multi | Type and<br>Reference | Semantics description   |
|--------------------------------|------|-------|-----------------------|---|
| Orientation of major axis      | MP   |       | Integer<br>(089)      | The IE value ( $N$ ) is derived by this formula:<br>$2N \le a < 2(N+1)$<br>a being the orientation in degree (0° 179°)  |
| Uncertainty Altitude           | MP   |       | Integer(012<br>7)     | The uncertainty in altitude, h, expressed in metres is mapped from the IE value ( $K$ ), with the following formula: $h = C((1+x)^K - 1)$ with $C = 45$ and $x = 0.025$ . |
| Confidence                     | MP   |       | Integer<br>(0100)     | in percentage   |

## 10.3.8.4d Ellipsoid point with uncertainty Circle

This IE contains the description of an ellipsoid point with an uncertainty circle as in [24].

| Information Element/Group name | Need | Multi | Type and Reference                                | Semantics description   |
|--------------------------------|------|-------|---|---|
| Latitude sign                  | MP   |       | Enumerated (North, South)                         |   |
| Degrees Of Latitude            | MP   |       | Integer (02 <sup>23</sup> -1)                     | The IE value (N) is derived by this formula: $N \le 2^{23} X/90 < N+1 X$ being the latitude in degree $(0^{\circ}90^{\circ})$                                   |
| Degrees Of Longitude           | MP   |       | Integer (-<br>2 <sup>23</sup> 2 <sup>23</sup> -1) | The IE value ( <i>N</i> ) is derived by this formula: <i>N</i> ≤2 <sup>24</sup> <i>X</i> /360 < <i>N</i> +1 <i>X</i> being the longitude in degree (-180°+180°) |
| Uncertainty Code               | MP   |       | Integer<br>(0127)                                 | The uncertainty $r$ is derived from the "uncertainty code" $k$ by $r = 10x(1.1^{k}-1)$  |

## 10.3.8.4e Ellipsoid point with uncertainty Ellipse

This IE contains the description of an ellipsoid point with an uncertainty ellipse as in [24].

| Information Element/Group name | Need | Multi | Type and Reference                                | Semantics description   |
|--------------------------------|------|-------|---|---|
| Latitude sign                  | MP   |       | Enumerated (North, South)                         |   |
| Degrees Of Latitude            | MP   |       | Integer (02 <sup>23</sup> -1)                     | The IE value (N) is derived by this formula: $N \le 2^{23} X/90 < N+1 X$ being the latitude in degree $(0^{\circ}90^{\circ})$ |
| Degrees Of Longitude           | MP   |       | Integer (-<br>2 <sup>23</sup> 2 <sup>23</sup> -1) | The IE value (N) is derived by this formula:  N≤2 <sup>24</sup> X/360 < N+1 X being the longitude in degree (-180°+180°)      |
| Uncertainty semi-major         | MP   |       | Integer<br>(0127)                                 | The uncertainty $r$ is derived from the "uncertainty code" $k$ by $r = 10x(1.1^k-1)$  |
| Uncertainty semi-minor         | MP   |       | Integer<br>(0127)                                 | The uncertainty $r$ is derived from the "uncertainty code" $k$ by $r = 10x(1.1^k-1)$  |
| Orientation of major axis      | MP   |       | Integer<br>(089)                                  | The IE value ( $N$ ) is derived by this formula:<br>$2N \le a < 2(N+1)$<br>a being the orientation in degree (0° 179°)        |
| Confidence                     | MP   |       | Integer<br>(0100)                                 | in percentage   |

# 10.3.8.4f GERAN system information

| Information<br>Element/Group<br>name | Need | Multi                                     | Type and reference   | Semantics<br>description   | Version |
|--------------------------------------|------|---|----------------------|--|---------|
| >>> GERAN<br>System Info             | MP   | 1 to<br><maxgeran<br>SI&gt;</maxgeran<br> |                      |  | REL-5   |
| >>>> GERAN<br>system info block      | MP   |   | Octet<br>string(123) | The first octet contains octet 1 of the GERAN system information block, the second octet contains octet 2 of the GERAN system information block and so on. | REL-5   |

# 10.3.8.4g GSM Target Cell Info

| Information<br>Element/Group | Need | Multi   | Type and reference   | Semantics description                     | Version |
|------------------------------|------|---|--|---|---------|
| name                         |      |   |  |   |         |
| GSM Target Cell<br>Info List | MP   | 1 to<br><maxgsmtar<br>getCells&gt;</maxgsmtar<br> |  |   | REL-6   |
| >BCCH ARFCN                  | MP   |   | Integer (01023)  | [45]                                      | REL-6   |
| >Band indicator              | MP   |   | Enumerated<br>(DCS 1800 band<br>used, PCS 1900<br>band used) | Indicates how to interpret the BCCH ARFCN | REL-6   |
| >BSIC                        | OP   |   | BSIC 10.3.8.2  |   | REL-6   |

## 10.3.8.4h Horizontal Velocity

This IE contains the description of a horizontal velocity as in [24].

| Information Element/Group name | Need | Multi | Type and Reference               | Semantics description   |
|--------------------------------|------|-------|----------------------------------|---|
| Bearing                        | MP   |       | Integer<br>(0359)                | The direction of movement is given in degrees where '0' represents North, '90' represents East, etc.  |
| Horizontal Speed               | MP   |       | Integer<br>(02 <sup>11</sup> -1) | The relationship between (N) and the horizontal speed (h) in kilometers per hour it describes is:<br>$N \le h < N + 0.5$ , for (N=0)<br>$N-0.5 \le h < N + 0.5$ , for (0< $N<2^{11}-1$ )<br>$N - 0.5 \le h$ , for (N = $2^{11}-1$ ) |

## 10.3.8.4i Horizontal with Vertical Velocity

This IE contains the description of horizontal with vertical velocity as in [24].

| Information Element/Group name | Need | Multi | Type and Reference               | Semantics description   |
|--------------------------------|------|-------|----------------------------------|---|
| Vertical Speed direction       | MP   |       | ENUMERAT                         |   |
|                                |      |       | ED (upward,                      |   |
|                                |      |       | downward)                        |   |
| Bearing                        | MP   |       | Integer<br>(0359)                | The direction of movement is given in degrees where '0' represents North, '90' represents East, etc.  |
| Horizontal Speed               | MP   |       | Integer<br>(02 <sup>11</sup> -1) | The relationship between (N) and the horizontal speed (h) in kilometers per hour it describes is: $N \le h < N + 0.5$ , for (N=0) $N-0.5 \le h < N + 0.5$ , for $(0 < N < 2^{11} - 1)$ $N - 0.5 \le h$ , for (N = $2^{11} - 1$ )                                    |
| Vertical Speed                 | MP   |       | Integer<br>(0255)                | The relationship between (N) and the vertical speed (v) in kilometres per hour it describes is given by the formula: $N \le v < N + 0.5$ , for (N=0) $N-0.5 \le v < N + 0.5$ , for (0 <n<2<sup>8-1) <math>N - 0.5 \le v</math>, for (N = 2<sup>8</sup>-1)</n<2<sup> |

## 10.3.8.4j Horizontal Velocity with Uncertainty

This IE contains the description of horizontal velocity with uncertainty as in [24].

| Information Element/Group name | Need | Multi | Type and Reference               | Semantics description  |
|--------------------------------|------|-------|----------------------------------|--|
| Bearing                        | MP   |       | Integer<br>(0359)                | The direction of movement is given in degrees where '0' represents North, '90' represents East, etc.   |
| Horizontal Speed               | MP   |       | Integer<br>(02 <sup>11</sup> -1) | The relationship between (N) and the horizontal speed (h) in kilometers per hour it describes is: $N \le h < N + 0.5$ , for (N=0) $N-0.5 \le h < N + 0.5$ , for $(0 < N < 2^{11} - 1)$ $N - 0.5 \le h$ , for (N = $2^{11} - 1$ ) |
| Horizontal Uncertainty Speed   | MP   |       | Integer<br>(0255)                | The IE value is encoded in increments of 1 kilometer per hour. The value of N give the uncertainty speed except for N=255 which indicates that the uncertainty is not specified  |

## 10.3.8.4k Horizontal with Vertical Velocity and Uncertainty

This IE contains the description of horizontal with vertical velocity and uncertainty as in [24].

| Information Element/Group name | Need | Multi | Type and Reference               | Semantics description  |
|--------------------------------|------|-------|----------------------------------|--|
| Vertical Speed direction       | MP   |       | ENUMERAT                         |  |
|                                |      |       | ED (upward,                      |  |
|                                |      |       | downward)                        |  |
| Bearing                        | MP   |       | Integer<br>(0359)                | The direction of movement is given in degrees where '0' represents North, '90' represents East, etc.   |
| Horizontal Speed               | MP   |       | Integer<br>(02 <sup>11</sup> -1) | The relationship between (N) and the horizontal speed (h) in kilometers per hour it describes is: $N \le h < N + 0.5$ , for (N=0) $N-0.5 \le h < N + 0.5$ , for $(0 < N < 2^{11} - 1)$ $N - 0.5 \le h$ , for (N = $2^{11} - 1$ )                 |
| Vertical Speed                 | MP   |       | Integer<br>(0255)                | The relationship between (N) and the vertical speed (v) in kilometres per hour it describes is given by the formula:<br>$N \le v < N + 0.5$ , for (N=0)<br>$N-0.5 \le v < N + 0.5$ , for (0< $N<2^8-1$ )<br>$N = 0.5 \le v$ , for (N = $2^8-1$ ) |
| Horizontal Uncertainty Speed   | MP   |       | Integer<br>(0255)                | The IE value is encoded in increments of 1 kilometer per hour. The value of N give the uncertainty speed except for N=255 which indicates that the uncertainty is not specified  |
| Vertical Uncertainty Speed     | MP   |       | Integer<br>(0255)                | The IE value is encoded in increments of 1 kilometer per hour. The value of N give the uncertainty speed except for N=255 which indicates that the uncertainty is not specified  |

## 10.3.8.5 Inter-RAT change failure

| Information Element/Group      | Need       | Multi | Type and     | Semantics description         |
|--------------------------------|------------|-------|--------------|-------------------------------|
| name                           |            |       | reference    |                               |
| Inter-RAT change failure cause | MP         |       | Enumerated(  | Four spare values are needed. |
| -                              |            |       | Configuratio |                               |
|                                |            |       | n            |                               |
|                                |            |       | unacceptabl  |                               |
|                                |            |       | e, physical  |                               |
|                                |            |       | channel      |                               |
|                                |            |       | failure,     |                               |
|                                |            |       | protocol     |                               |
|                                |            |       | error,       |                               |
|                                |            |       | unspecified) |                               |
| Protocol error information     | CV-ProtErr |       | Protocol     |                               |
|                                |            |       | error        |                               |
|                                |            |       | information  |                               |
|                                |            |       | 10.3.8.12    |                               |

| Condition | Explanation  |  |
|-----------|--|--|
| ProtErr   | The IE is mandatory present if the IE "Inter-RAT     |  |
|           | change failure cause" has the value "Protocol error" |  |
|           | and not needed otherwise.                            |  |

## 10.3.8.6 Inter-RAT handover failure

| Information Element/Group  | Need       | Multi | Type and     | Semantics description           |
|----------------------------|------------|-------|--------------|---------------------------------|
| name                       |            |       | reference    |                                 |
| Inter-RAT handover failure | MD         |       | Enumerated(  | Default value is "unspecified". |
| cause                      |            |       | Configuratio |                                 |
|                            |            |       | n            | Eleven spare values are         |
|                            |            |       | unacceptabl  | needed.                         |
|                            |            |       | e, physical  |                                 |
|                            |            |       | channel      |                                 |
|                            |            |       | failure,     |                                 |
|                            |            |       | protocol     |                                 |
|                            |            |       | error,       |                                 |
|                            |            |       | inter-RAT    |                                 |
|                            |            |       | protocol     |                                 |
|                            |            |       | error,       |                                 |
|                            |            |       | unspecified) |                                 |
| Protocol error information | CV-ProtErr |       | Protocol     |                                 |
|                            |            |       | error        |                                 |
|                            |            |       | information  |                                 |
|                            |            |       | 10.3.8.12    |                                 |

| Condition | Explanation   |  |
|-----------|---|--|
| ProtErr   | The IE is mandatory present if the IE "Inter-RAT handover failure cause" has the value "Protocol error" and not needed otherwise. |  |

# 10.3.8.7 Inter-RAT UE radio access capability

This Information Element contains the inter-RAT UE radio access capability that is structured and coded according to the specification used for the corresponding system type.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| CHOICE system                  | MP   |       |                    |                       |         |

| Information<br>Element/Group name                          | Need | Multi  | Type and reference       | Semantics description   | Version |
|--|------|--|--------------------------|---|---------|
| >GSM   |      |  |                          |   |         |
| >>Mobile Station<br>Classmark 2                            | MP   |  | Octet<br>string (5)      | This IE is formatted as 'TLV' and is coded in the same way as the Mobile Station Classmark 2 information element in [5]. The first octet is the Mobile station classmark 2 IEI and its value shall be set to 33H (except in the case of NOTE 2). The second octet is the Length of mobile station classmark 2 and its value shall be set to 3.  The octet 3 contains the first octet of the value part of the Mobile Station Classmark 2 information element, the octet 4 contains the second octet of the value part of the Mobile Station Classmark 2 information element and so on. For each of these octets, the first/ leftmost/ most significant bit of the octet contains b8 of the corresponding octet of the Mobile Station Classmark 2. See NOTE 2. |         |
| >>Mobile Station<br>Classmark 3                            | MP   |  | Octet<br>string<br>(132) | This IE is formatted as 'V' and is coded in the same way as the value part in the Mobile station classmark 3 information element in [5].  The first octet contains octet 1 of the value part of Mobile station classmark 3, the second octet contains octet 2 of the value part of Mobile station classmark 3 and so on.  See NOTE 1, NOTE 2.   |         |
| >>MS Radio Access<br>Capability                            | OP   |  | Octet<br>string<br>(164) | This IE is formatted as 'V' and is coded in the same way as the value part in the MS Radio Access Capability information element in [5].  | REL-6   |
| >GERAN lu  |      |  |                          |   | REL-5   |
| >>MS GERAN Iu mode<br>Radio Access Capability<br>>cdma2000 | MP   |  | Bit string<br>(1170)     | Formatted and coded according to [53]. The first/leftmost/most significant bit of the bit string contains bit 8 of the first octet of the IE.   | REL-5   |
| >>cdma2000<br>>>cdma2000Message                            | MP   | 1.to. <ma<br>xInterSy<br/>sMessa<br/>ges&gt;</ma<br> |                          |   |         |
| >>>MSG_TYPE(s)   | MP   |  | Bit string (8)           | Formatted and coded according to cdma2000 specifications. The first/leftmost/most significant bit of the bit string contains bit 7 of the MSG_TYPE.   |         |
| >>>cdma2000Messagep<br>ayload(s)                           | MP   |  | Bit string (1512)        | Formatted and coded according to cdma2000 specifications. The first/leftmost/most significant bit of the bit string contains bit 7 of the first octet of the cdma2000 message.  |         |

NOTE 1: The value part is specified by means of CSN.1, which encoding results in a bit string, to which final padding may be appended upto the next octet boundary [5]. The first/ leftmost bit of the CSN.1 bit string is placed in the first/ leftmost/ most significant bit of the first octet. This continues until the last bit of the CSN.1 bit string, which is placed in the last/ rightmost/ least significant bit of the last octet.

NOTE 2: The information in these IEs is optionally present in the INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES message, otherwise it is mandatory present. If the information in the IEs "Mobile Station Classmark 2" and "Mobile Station Classmark 3" is not included, it is indicated by setting the first octet (IEI) of the IE "Mobile Station Classmark 2" to 00H. In this case, the receiver should ignore the value parts of the Mobile Station Classmark 2 and the Mobile Station Classmark 3. The contents of those are set to zero.

#### 10.3.8.8 Void

## 10.3.8.8a Inter-RAT UE security capability

| Information<br>Element/Group name | Need | Multi | Type and reference | Semantics description   | Version |
|-----------------------------------|------|-------|--------------------|---|---------|
| CHOICE system                     | MP   |       |                    |   |         |
| >GSM                              |      |       |                    |   |         |
| >>GSM security capability         | MP   |       |                    | The value TRUE means that the indicated ciphering algorithm is supported. |         |
| >>>A5/7 supported                 | MP   |       | Boolean            |   |         |
| >>>A5/6 supported                 | MP   |       | Boolean            |   |         |
| >>>A5/5 supported                 | MP   |       | Boolean            |   |         |
| >>>A5/4 supported                 | MP   |       | Boolean            |   |         |
| >>>A5/3 supported                 | MP   |       | Boolean            |   |         |
| >>>A5/2 supported                 | MP   |       | Boolean            |   |         |
| >>>A5/1 supported                 | MP   | •     | Boolean            |   |         |

## 10.3.8.9 MIB Value tag

| Information Element/Group | Need | Multi | Type and     | Semantics description |
|---------------------------|------|-------|--------------|-----------------------|
| name                      |      |       | reference    |                       |
| MIB Value tag             | MP   |       | Integer (18) |                       |

# 10.3.8.10 PLMN Value tag

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| PLMN Value tag                 | MP   |       | Integer<br>(1256)  |                       |

#### 10.3.8.10a PNBSCH allocation

UTRAN may use this IE to provide silent periods in the cell that may be used for cell synchronisation purposes.

| Information Element/Group name       | Need | Multi | Type and reference   | Semantics description | Version |
|--------------------------------------|------|-------|--|-----------------------|---------|
| Number of repetitions per SFN period | MP   |       | Integer(2, 3,<br>4, 5, 6, 7, 8,<br>9, 10, 12, 14,<br>16, 18, 20,<br>24, 28, 32,<br>36, 40, 48,<br>56, 64, 72,<br>80) |                       | REL-4   |

## 10.3.8.11 Predefined configuration identity and value tag

| Information Element/Group         | Need | Multi | Type and      | Semantics description |
|-----------------------------------|------|-------|---------------|-----------------------|
| name                              |      |       | reference     |                       |
| Predefined configuration identity | MP   |       | Predefined    |                       |
|                                   |      |       | configuration |                       |
|                                   |      |       | identity      |                       |
|                                   |      |       | 10.3.4.5      |                       |
| Predefined configuration value    | MP   |       | Predefined    |                       |

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| tag                            |      |       | configuration      |                       |
|                                |      |       | value tag          |                       |
|                                |      |       | 10.3.4.6           |                       |

## 10.3.8.12 Protocol error information

This information element contains diagnostics information returned by the receiver of a message that was not completely understood.

| Information Element/Group | Need | Multi | Type and    | Semantics description      |
|---------------------------|------|-------|-------------|----------------------------|
| name                      |      |       | reference   |                            |
| CHOICE diagnostics type   | MP   |       |             | One spare value is needed. |
| >Protocol error cause     |      |       | Protocol    |                            |
|                           |      |       | error cause |                            |
|                           |      |       | 10.3.3.26   |                            |

# 10.3.8.13 References to other system information blocks

| Information element/Group name                          | Need | Multi                     | Type and reference                  | Semantics description   | Version |
|---|------|---------------------------|-------------------------------------|---|---------|
| References to other system information blocks           | MP   | 1 to<br><maxsib></maxsib> |                                     | System information blocks for which multiple occurrences are used, may appear more than once in this list |         |
| >Scheduling information                                 | MP   |                           | Scheduling information, 10.3.8.16   |   |         |
| >SIB type SIBs only                                     | MP   |                           | SIB Type<br>SIBs only,<br>10.3.8.22 |   |         |
| References to other extension system information blocks | OP   | 1 to<br><maxsib></maxsib> |                                     |   | REL-6   |
| >Scheduling information                                 | MP   |                           | Scheduling information, 10.3.8.16   |   | REL-6   |
| >Extension SIB type                                     | MP   |                           | SIB type<br>extension<br>10.3.8.18b |   | REL-6   |

# 10.3.8.14 References to other system information blocks and scheduling blocks

| Information element/Group name                          | Need | Multi                     | Type and reference                  | Semantics description   | Version |
|---|------|---------------------------|-------------------------------------|---|---------|
| References to other system information blocks           | MP   | 1 to<br><maxsib></maxsib> |                                     | System information blocks for which multiple occurrences are used, may appear more than once in this list |         |
| >Scheduling information                                 | MP   |                           | Scheduling information, 10.3.8.16   |   |         |
| >SIB and SB type  | MP   |                           | SIB and SB<br>Type,<br>10.3.8.18a   |   |         |
| References to other extension system information blocks | OP   | 1 to<br><maxsib></maxsib> |                                     |   | REL-6   |
| >Scheduling information                                 | MP   |                           | Scheduling information, 10.3.8.16   |   | REL-6   |
| >Extension SIB type                                     | MP   |                           | SIB type<br>extension<br>10.3.8.18b |   | REL-6   |

# 10.3.8.15 Rplmn information

Contains information to provide faster RPLMN selection in the UE.

| Information Element/Group name       | Need | Multi                               | Type and reference  | Semantics description  | Version |
|--------------------------------------|------|-------------------------------------|---------------------|--|---------|
| GSM BA Range                         | OP   | 1 to<br>maxNumG<br>SMFreqRa<br>nges |                     | GSM BA Range   |         |
| >GSM Lower Range (UARFCN)            | MP   |                                     | Integer(016<br>383) | Lower bound for range of GSM BA freqs  |         |
| >GSM Upper Range (UARFCN)            | MP   |                                     | Integer(016<br>383) | Upper bound for range of GSM BA freqs  |         |
| FDD UMTS Frequency list              | OP   | 1 to<br>maxNumF<br>DDFreqs          |                     |  |         |
| >UARFCN (Nlow)                       | MP   |                                     | Integer(016<br>383) | [21]   |         |
| >UARFCN (Nupper)                     | OP   |                                     | Integer(016<br>383) | [21] This IE is only needed when the FDD frequency list is specifying a range. |         |
| 3.84 Mcps TDD UMTS<br>Frequency list | OP   | 1 to<br>maxNumT<br>DDFreqs          |                     |  |         |
| >UARFCN                              | MP   | •                                   | Integer(016<br>383) | [22]   |         |
| 7.68 Mcps TDD UMTS<br>Frequency list | OP   | 1 to<br>maxNumT<br>DDFreqs          |                     |  | REL-7   |
| >UARFCN                              | MP   |                                     | Integer(016<br>383) | [22]   | REL-7   |
| 1.28 Mcps TDD UMTS<br>Frequency list | OP   | 1 to<br>maxNumT<br>DDFreqs          | ,                   |  | REL-4   |

| Information Element/Group       | Need | Multi                              | Type and             | Semantics   | Version |
|---------------------------------|------|------------------------------------|----------------------|---|---------|
| name                            |      |                                    | reference            | description   |         |
| >UARFCN                         | MP   |                                    | Integer(016<br>383)  | [22]  | REL-4   |
| CDMA2000 UMTS Frequency<br>list | OP   | 1 to<br>maxNumC<br>DMA200Fr<br>eqs |                      |   |         |
| >BAND_CLASS                     | MP   |                                    | Bit string(5 bits)   | TIA/EIA/IS-2000 When mapping the BAND_CLASS to the bit string, the first/leftmost bit of the bit string contains the most significant bit |         |
| >CDMA_FREQ                      | MP   |                                    | Bit string (11 bits) | TIA/EIA/IS-2000 When mapping the CDMA_FREQ to the bit string, the first/leftmost bit of the bit string contains the most significant bit  |         |

# 10.3.8.16 Scheduling information

| Information Element/Group name                   | Need | Multi | Type and reference   | Semantics description   |
|--|------|-------|--|---|
| CHOICE Value tag                                 | OP   |       |  |   |
| >PLMN Value tag                                  |      |       | PLMN Value<br>tag 10.3.8.10                                  | This IE is included if the following conditions are fulfilled: the SIB type equals system information block type 1 Note: IE 'PLMN value tag' is used for SIB1 but the area scope for SIB 1 is Cell.   |
| >Predefined configuration identity and value tag |      |       | Predefined configuration identity and value tag 10.3.8.11    | This IE is included if the following conditions are fulfilled: the SIB type equals system information block type 16   |
| >Cell Value tag                                  |      |       | Cell Value<br>tag 10.3.8.4                                   | This IE is included if the following conditions are fulfilled: the SIB type does not equal system information block type 1; and the area scope for the system information block is set to "cell" in table 8.1.1; and a value tag is used to indicate changes in the system information block. |
| >SIB occurrence identity and value tag           |      |       | SIB<br>occurrence<br>identity and<br>value tag<br>10.3.8.20b | This IE is included if the following conditions are fulfilled: the SIB type equals system information block types 15.2, 15.2bis, 15.3 and 15.3bis   |
| Scheduling                                       | MP   |       |  |   |
| >SEG_COUNT                                       | MD   |       | SEG<br>COUNT<br>10.3.8.17                                    | Default value is 1  |

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description  |
|--------------------------------|------|-------|---|--|
| >SIB_REP                       | MP   |       | Integer (4, 8,<br>16, 32, 64,<br>128, 256,<br>512, 1024,<br>2048, 4096) | Repetition period for the SIB in frames                                |
| >SIB_POS                       | MP   |       | Integer (0<br>Rep-2 by<br>step of 2)                                    | Position of the first segment<br>Rep is the value of the<br>SIB_REP IE |
| >SIB_POS offset info           | MD   | 115   |   | see below for default value  |
| >>SIB_OFF                      | MP   |       | Integer(232<br>by step of 2)  | Offset of subsequent segments  |

| Field               | Default value  |
|---------------------|--|
| SIB_POS offset info | The default value is that all segments are consecutive, i.e., that the SIB_OFF = 2 for all segments except when MIB segment/complete MIB is scheduled to be transmitted in between segments from same SIB. In that case, SIB_OFF=4 in between segments which are scheduled to be transmitted at SFNprime = 8 *n-2 and 8*n + 2, and SIB_OFF=2 for the rest of the segments. |

## 10.3.8.17 SEG COUNT

| Information Element/Group name | Need | Multi | Type and reference | Semantics description                              |
|--------------------------------|------|-------|--------------------|--|
| SEG_COUNT                      | MP   |       | Integer<br>(116)   | Number of segments in the system information block |

## 10.3.8.18 Segment index

Each system information segment has an individual segment index.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| Segment index                  | MP   |       | Integer<br>(115)   | Segments of a system information block are numbered starting with 0 for the first segment and 1 for the next segment, which can be the first subsequent segment or a last segment. |

# 10.3.8.18a SIB and SB type

The SIB type identifies a specific system information block.

| Information Element/Group | Need | Multi | Type and              | Semantics description       |
|---------------------------|------|-------|-----------------------|-----------------------------|
| name                      |      |       | reference             |                             |
| SIB and SB type           | MP   |       | Enumerated, see below | Two spare values are needed |

| List of enumerated values     | Version |
|-------------------------------|---------|
| System Information Type 1,    |         |
| System Information Type 2,    |         |
| System Information Type 3,    |         |
| System Information Type 4,    |         |
| System Information Type 5,    |         |
| System Information Type 6,    |         |
| System Information Type 7,    |         |
| System Information Type 11,   |         |
| System Information Type 12,   |         |
| System Information Type 13,   |         |
| System Information Type 13.1, |         |
| System Information Type 13.2, |         |
| System Information Type 13.3, |         |
| System Information Type 13.4, |         |
| System Information Type 14,   |         |
| System Information Type 15,   |         |
| System Information Type 15.1, |         |
| System Information Type 15.2, |         |
| System Information Type 15.3, |         |
| System Information Type 15.4, |         |
| System Information Type 15.5, |         |
| System Information Type 16,   |         |
| System Information Type 17,   |         |
| System Information Type 18,   |         |
| Scheduling Block 1,           |         |
| Scheduling Block 2,           |         |
| System Information Type 5bis  | REL-6   |

# 10.3.8.18b SIB type extension

The SIB type identifies a specific extension system information block.

| Information Element/Group name | Need | Multi | Type and reference    | Semantics description | Version |
|--------------------------------|------|-------|-----------------------|-----------------------|---------|
| SIB type extension             | MP   |       | Enumerated, see below |                       | REL-6   |

| List of enumerated values        | Version |
|----------------------------------|---------|
| System Information Type 11bis    | REL-6   |
| System Information Type 15bis,   | REL-7   |
| System Information Type 15.1bis, |         |
| System Information Type 15.2bis, |         |
| System Information Type 15.3bis, |         |
| System Information Type 15.6,    |         |
| System Information Type 15.7     |         |
| System Information Type 15.8     |         |

## 10.3.8.19 SIB data fixed

Contains the result of a master information block or a system information block after encoding and segmentation. The IE is used for segments with fixed length (segments filling an entire transport block).

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description                                |
|--------------------------------|------|-------|----------------------|--|
| SIB data fixed                 | MP   |       | Bit string (<br>222) | The first bit contains the first bit of the segment. |

#### 10.3.8.20 SIB data variable

Contains either a complete system information block or a segment of a system information block. Contains the result of a master information block or a system information block after encoding and segmentation. The IE is used for segments with variable length. The system information blocks are defined in clauses 10.2.48.8.1 to 10.2.48.8.18.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description            |
|--------------------------------|------|-------|--------------------|----------------------------------|
| SIB data variable              | MP   |       | Bit string (       | The first bit contains the first |
|                                |      |       | 1214)              | bit of the segment.              |

#### 10.3.8.20a SIB occurrence identity

This information element identifies a SIB occurrence for System Information Block types 15.2 and 15.3. For System Information Block type 15.2, this identity is assigned to the visible satellite only. Unused identities are claimed by newly rising satellites.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| SIB occurrence identity        | MP   |       | Integer<br>(015)   |                       |

## 10.3.8.20b SIB occurrence identity and value tag

| Information Element/Group name | Need | Multi | Type and reference                           | Semantics description |
|--------------------------------|------|-------|--|-----------------------|
| SIB occurrence identity        | MP   |       | SIB<br>occurrence<br>identity                |                       |
| SIB occurrence value tag       | MP   |       | SIB<br>occurrence<br>value tag<br>10.3.8.20c |                       |

#### 10.3.8.20c SIB occurrence value tag

This information element is used to identify different versions of SIB occurrence for System Information Block types 15.2 and 15.3.

| Information Element/Group name | Need | Multi | Type and<br>Reference | Semantics description |
|--------------------------------|------|-------|-----------------------|-----------------------|
| SIB occurrence value tag       | MP   |       | Integer(015           |                       |

#### 10.3.8.21 SIB type

The SIB type identifies a specific system information block.

| Information Element/Group name  | Need | Multi | Type and reference    | Semantics description |  |
|---|------|-------|-----------------------|-----------------------|--|
| SIB type  | MP   |       | Enumerated, see below | NOTE 1                |  |
| NOTE 1: If the value "Extension Type" is signalled, the UE shall use the scheduling information in the MIB and, if present, in the SB1 and SB2 to identify the specific type of system information block. |      |       |                       |                       |  |

| List of enumerated values     | Version |
|-------------------------------|---------|
| Master information block,     |         |
| System Information Type 1,    |         |
| System Information Type 2,    |         |
| System Information Type 3,    |         |
| System Information Type 4,    |         |
| System Information Type 5,    |         |
| System Information Type 6,    |         |
| System Information Type 7,    |         |
| System Information Type 11,   |         |
| System Information Type 12,   |         |
| System Information Type 13,   |         |
| System Information Type 13.1, |         |
| System Information Type 13.2, |         |
| System Information Type 13.3, |         |
| System Information Type 13.4, |         |
| System Information Type 14,   |         |
| System Information Type 15,   |         |
| System Information Type 15.1, |         |
| System Information Type 15.2, |         |
| System Information Type 15.3, |         |
| System Information Type 15.4, |         |
| System Information Type 15.5, |         |
| System Information Type 16,   |         |
| System Information Type 17,   |         |
| System Information Type 18,   |         |
| Scheduling Block 1,           |         |
| Scheduling Block 2,           | DEL 6   |
| System Information Type 5bis, | REL-6   |
| Extension Type                |         |

# 10.3.8.22 SIB type SIBs only

The SIB type identifies a specific system information block.

| Information Element/Group name | Need | Multi | Type and reference    | Semantics description        |
|--------------------------------|------|-------|-----------------------|------------------------------|
| SIB type SIBs only             | MP   |       | Enumerated, see below | Four spare values are needed |

| List of enumerated values     | Version |
|-------------------------------|---------|
| System Information Type 1,    |         |
| System Information Type 2,    |         |
| System Information Type 3,    |         |
| System Information Type 4,    |         |
| System Information Type 5,    |         |
| System Information Type 6,    |         |
| System Information Type 7,    |         |
| System Information Type 11,   |         |
| System Information Type 12,   |         |
| System Information Type 13,   |         |
| System Information Type 13.1, |         |
| System Information Type 13.2, |         |
| System Information Type 13.3, |         |
| System Information Type 13.4, |         |
| System Information Type 14,   |         |
| System Information Type 15,   |         |
| System Information Type 15.1, |         |
| System Information Type 15.2, |         |
| System Information Type 15.3, |         |
| System Information Type 15.4, |         |
| System Information Type 15.5, |         |
| System Information Type 16,   |         |
| System Information Type 17,   |         |
| System Information Type 18,   |         |
| System Information Type 5bis  | REL-6   |
|                               |         |

# 10.3.9 ANSI-41 Information elements

## 10.3.9.1 ANSI-41 Core Network Information

| Information element/Group name | Need | Multi | Type and reference    | Semantics description |
|--------------------------------|------|-------|-----------------------|-----------------------|
| P_REV                          | MP   |       | P_REV<br>10.3.9.10    |                       |
| MIN_P_REV                      | MP   |       | MIN_P_REV<br>10.3.9.8 |                       |
| SID                            | MP   |       | SID<br>10.3.9.11      |                       |
| NID                            | MP   |       | NID 10.3.9.9          |                       |

#### 10.3.9.2 ANSI-41 Global Service Redirection information

This Information Element contains ANSI-41 Global Service Redirection information.

| Information Element/Group | Need | Multi | Type and   | Semantics description    |
|---------------------------|------|-------|------------|--------------------------|
| name                      |      |       | reference  |                          |
| ANSI-41 Global Service    | MP   |       | ANSI-41    | Formatted and coded      |
| Redirection information   |      |       | NAS        | according to the 3GPP2   |
|                           |      |       | parameter, | document "G3G CDMA DS on |
|                           |      |       | 10.3.9.3   | ANSI-41"                 |

## 10.3.9.3 ANSI-41 NAS parameter

This Information Element contains ANSI-41 User Zone Identification information.

| Information Element/Group | Need | Multi | Type and   | Semantics description            |
|---------------------------|------|-------|------------|----------------------------------|
| name                      |      |       | reference  |                                  |
| ANSI-41 NAS parameter     | MP   |       | Bit string | The first bit contains the first |
|                           |      |       | (size      | bit of the ANSI-41 information.  |
|                           |      |       | (12048))   | ļ.                               |

#### 10.3.9.4 ANSI-41 NAS system information

This Information Element contains ANSI-41 system information.

| Information Element/Group | Need | Multi | Type and   | Semantics description    |
|---------------------------|------|-------|------------|--------------------------|
| name                      |      |       | reference  |                          |
| NAS (ANSI-41) system      | MP   |       | ANSI-41    | Formatted and coded      |
| information               |      |       | NAS        | according to the 3GPP2   |
|                           |      |       | parameter, | document "G3G CDMA DS on |
|                           |      |       | 10.3.9.3   | ANSI-41"                 |

## 10.3.9.5 ANSI-41 Private Neighbour List information

This Information Element contains ANSI-41 Private Neighbour List information.

| Information Element/Group name             | Need | Multi | Type and reference                       | Semantics description   |
|--|------|-------|--|---|
| ANSI-41 Private Neighbour List information | MP   |       | ANSI-41<br>NAS<br>parameter,<br>10.3.9.3 | Formatted and coded<br>according to the 3GPP2<br>document "G3G CDMA DS on<br>ANSI-41" |

#### 10.3.9.6 ANSI-41 RAND information

This Information Element contains ANSI-41 RAND information.

| Information Element/Group | Need | Multi | Type and                                 | Semantics description  |
|---------------------------|------|-------|--|--|
| name                      |      |       | reference                                |  |
| ANSI-41 RAND information  | MP   |       | ANSI-41<br>NAS<br>parameter,<br>10.3.9.3 | Formatted and coded according to the 3GPP2 document "G3G CDMA DS on ANSI-41" |

#### 10.3.9.7 ANSI-41 User Zone Identification information

This Information Element contains ANSI-41 User Zone Identification information.

| Information Element/Group  | Need | Multi | Type and   | Semantics description    |
|----------------------------|------|-------|------------|--------------------------|
| name                       |      |       | reference  |                          |
| ANSI-41 User Zone          | MP   |       | ANSI-41    | Formatted and coded      |
| Identification information |      |       | NAS        | according to the 3GPP2   |
|                            |      |       | parameter, | document "G3G CDMA DS on |
|                            |      |       | 10.3.9.3   | ANSI-41"                 |

## 10.3.9.8 MIN\_P\_REV

This Information Element contains minimum protocol revision level.

| Information Element/Group | Need | Multi | Type and       | Semantics description   |
|---------------------------|------|-------|----------------|---|
| name                      |      |       | reference      |   |
| MIN_P_REV                 | MP   |       | Bit string (8) | Minimum protocol revision level. The first/leftmost bit of the bit string contains the most significant bit of the MIN_P_REV. |

#### 10.3.9.9 NID

This Information Element contains Network identification.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| NID                            | MP   |       | Bit string<br>(16) | Network identification. The first/leftmost bit of the bit string contains the most significant bit of the NID. |

## 10.3.9.10 P\_REV

This Information Element contains protocol revision level.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   |
|--------------------------------|------|-------|--------------------|---|
| P_REV                          | MP   |       | Bit string (8)     | Protocol revision level. The first/leftmost bit of the bit string contains the most significant bit of the P_REV. |

#### 10.3.9.11 SID

This Information Element contains System identification.

| Information Element/Group | Need | Multi | Type and           | Semantics description   |
|---------------------------|------|-------|--------------------|---|
| name                      |      |       | reference          |   |
| SID                       | MP   |       | Bit string<br>(15) | System identification. The first/leftmost bit of the bit string contains the most significant bit of the SID. |

## 10.3.9a MBMS Information elements

## 10.3.9a.1 MBMS Common CCTrCH identity

Identifies a Coded Composite Transport channel configuration included within the MBMS COMMON P-T-M RB INFORMATION message.

| Information element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| MBMS Common CCTrCh identity    | MP   |       | Integer<br>(132)   |                       | REL-6   |

## 10.3.9a.2 MBMS Common PhyCh identity

Identifies a physical channel configuration included within the MBMS COMMON P-T-M RB INFORMATION message.

| Information element/Group name | Need | Multi | Type and reference | Semantics<br>description | Version |
|--------------------------------|------|-------|--------------------|--------------------------|---------|
| MBMS Common PhyCh identity     | MP   |       | Integer<br>(132)   |                          | REL-6   |

#### 10.3.9a.3 MBMS Common RB identity

Identifies a radio bearer channel configuration included within the MBMS COMMON P-T-M RB INFORMATION message.

| Information element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| MBMS Common RB identity        | MP   |       | Integer<br>(132)   |                       | REL-6   |

## 10.3.9a.4 MBMS Common TrCh identity

Identifies a transport channel configuration included within the MBMS COMMON P-T-M RB INFORMATION message.

| Information element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| MBMS Common TrCh identity      | MP   |       | Integer<br>(132)   |                       | REL-6   |

## 10.3.9a.5 MBMS Current cell S-CCPCH identity

Identifies one of the current cell's Secondary CCPCH's.

| Information element/Group name         | Need | Multi | Type and reference          | Semantics description | Version |
|--|------|-------|-----------------------------|-----------------------|---------|
| MBMS Current cell S-<br>CCPCH identity | MP   |       | Integer<br>(1maxSC<br>CPCH) |                       | REL-6   |

#### 10.3.9a.6 Void

# 10.3.9a.7 MBMS L1 combining schedule

Includes information about the MBMS L1 combining schedule.

| Information element/Group name | Need | Multi                           | Type and reference  | Semantics description  | Version |
|--------------------------------|------|---------------------------------|---|--|---------|
| MBMS L1 combining cycle length | MP   |                                 | Enumerate<br>d (32, 64,<br>128, 256,<br>512, 1024)          | In number of radio frames  | REL-6   |
| MBMS L1 combining cycle offset | MD   |                                 | Integer (0 MBMS L1 combining cycle length - 4) by step of 4 | Start of the L1 combining cycle (relative to the timing of the current cell) in number of radio frames. Default value is no offset | REL-6   |
| MTCH L1- combining period list | MP   | 1 to <<br>maxMB<br>MS-<br>L1CP> |   | One or more periods in which L1 combining is performed   | REL-6   |
| >Start                         | MP   |                                 | Integer (0 MBMS L1 combining cycle length - 4) by step of 4 | Number of frames from<br>the end of the previous<br>combining period or the<br>start of the cycle (for<br>the first period)        | REL-6   |
| >Duration                      | MP   |                                 | Integer (4 MBMS L1 combining cycle length) by step of 4     | Number of frames (see note)  | REL-6   |

NOTE: The MTCH L1- combining period should indicate one or more complete TTIs.

## 10.3.9a.7o MBMS p-t-m activation time

| Information Element/Group name   | Need | Multi | Type and reference | Semantics description         | Version |  |
|--|------|-------|--------------------|-------------------------------|---------|--|
| MBMS p-t-m activation  | MP   |       | Integer            | The 11 LSB of the SFN. Note 1 | REL-6   |  |
| time   |      |       | (02047)            | and 2.                        |         |  |
| Note 1: The "MBMS p-t-m activation time" indicates the start of the 10 ms frame corresponding to the indicated SFN value and of the primary CCPCH of the cell where this IE is transmitted.  |      |       |                    |                               |         |  |
| Note 2: The range of the "MBMS p-t-m activation time" is from 10 ms after the beginning of the MCCH modification period wherein it is transmitted and to the end of next following MCCH modification period. The UE shall consider a value out of this range as expired. |      |       |                    |                               |         |  |

# 10.3.9a.7a MBMS p-t-m RB information

Includes information about an MBMS p-t-m radio bearers mapped on a TrCH.

| Information element/Group name | Need         | Multi | Type and reference                                      | Semantics description  | Version |
|--------------------------------|--------------|-------|---|--|---------|
| RB information                 | CV-Curr      |       | MBMS<br>Common<br>RB<br>identity<br>10.3.9a.3           |  | REL-6   |
| MBMS short<br>transmission ID  | MP           |       | MBMS<br>Short<br>transmissi<br>on identity<br>10.3.9a.1 |  | REL-6   |
| MBMS logical channel identity  | MP           |       | Integer<br>(115)  | This identifier is used to distinguish different MTCH mapped on to a TrCh ("MBMS-Id" within the MAC header[15])                          | REL-6   |
| L1 combining status            | CV-<br>Neigh |       | Boolean   | The IE is only applicable in case of partial L1 comining, in which case value TRUE means that L1 combining is used for this radio bearer | REL-6   |

| Condition | Explanation                                       |
|-----------|---|
| Curr      | The IE is mandatory present if the IE "MBMS p-t-m |
|           | RB information list" is included in the MBMS      |
|           | CURRENT CELL P-T-M RB INFORMATION message         |
|           | and not needed otherwise                          |
| Neigh     | The IE is mandatory present if the IE "MBMS p-t-m |
|           | RB information list" is included in the MBMS      |
|           | NEIGHBOURING CELL P-T-M RB INFORMATION            |
|           | message and not needed otherwise                  |

#### 10.3.9a.7b MBMS Selected Service Info

This IE indicates whether the UE has any MBMS Selected Services, and if it does it includes the list of MBMS Selected Services.

| Information element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|--------------------------------|------|-------|--------------------|-----------------------|---------|
| CHOICE Status                  |      |       |                    |                       |         |
| >None                          |      |       |                    | (no data)             |         |
| >Some                          | MP   |       | MBMS               |                       | REL-6   |
|                                |      |       | Selected           |                       |         |
|                                |      |       | Services           |                       |         |
|                                |      |       | Full               |                       |         |
|                                |      |       | 10.3.9a.7c         |                       |         |

#### 10.3.9a.7c MBMS Selected Services Full

This IE provides the MBMS Selected Services by means of the full identity.

| Information element/Group name | Need | Multi                                | Type and reference                       | Semantics description | Version |
|--------------------------------|------|--------------------------------------|--|-----------------------|---------|
| MBMS Selected Services         | MP   | 1 to <<br>maxMBM<br>SservSel<br>ect> |  |                       | REL-6   |
| >MBMS Selected Service<br>ID   | MP   |                                      | MBMS<br>service<br>identity<br>10.3.9a.8 |                       | REL-6   |

#### 10.3.9a.7d MBMS Selected Services Short

This IE indicates the MBMS Selected Services by means of a short identity to identify the MBMS transmission by referencing the services included in the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages.

| Information element/Group name | Need | Multi                                | Type and reference                                       | Semantics<br>description  | Version |
|--------------------------------|------|--------------------------------------|--|---|---------|
| MBMS Selected Services         | MP   | 1 to <<br>maxMBM<br>SservSel<br>ect> |  |   | REL-6   |
| >MBMS Selected Service ID      | MP   |                                      | MBMS<br>Short<br>transmissio<br>n identity<br>10.3.9a.10 |   | REL-6   |
| Modification period identity   | MP   |                                      | Integer<br>(01)  | Indicates the modification period the MBMS short transmission identities refer to | REL-6   |

## 10.3.9a.8 MBMS Service identity

Includes information about the identity of an MBMS service.

| Information element/Group name | Need | Multi | Type and reference               | Semantics description  | Version |
|--------------------------------|------|-------|----------------------------------|--|---------|
| MBMS Service ID                | MP   |       | MBMS<br>Service ID<br>10.3.9a.8a |  | REL-6   |
| CHOICE PLMN identity           | MP   |       |                                  |  | REL-6   |
| >SameAs-MIB                    |      |       |                                  | (No data) The PLMN identity is the same as indicated by the IE "PLMN identity" in MIB          | REL-6   |
| >SameAsMIB-<br>MultiPLMN-Id    |      |       |                                  |  | REL-6   |
| >>Multi PLMN id                | MP   |       | Integer<br>(15)                  | The PLMN identity is one of the PLMN identities (1 to 5) in the IE "Multiple PLMN List" in MIB | REL-6   |
| >ExplicitPLMN-Id               |      |       |                                  |  | REL-6   |
| >>PLMN identity                | MP   |       | PLMN<br>identity<br>10.3.1.11    |  | REL-6   |

#### 10.3.9a.8a MBMS Service ID

Uniquely identifies an MBMS bearer service within a PLMN.

| Information element/Group name | Need | Multi | Type and reference  | Semantics description  | Version |
|--------------------------------|------|-------|---------------------|--|---------|
| MBMS Service ID                | MP   |       | Octet<br>string (3) | The content of the MBMS Service ID field is coded as octets 3 to 5 of the IE Temporary Mobile Group Identity [5] | REL-6   |

## 10.3.9a.9 MBMS Session identity

Includes information about the the identity of a session of an MBMS service.

| Information element/Group name | Need | Multi | Type and reference  | Semantics<br>description | Version |
|--------------------------------|------|-------|---------------------|--------------------------|---------|
| MBMS Session ID                | MP   |       | Octet<br>string (1) |                          | REL-6   |

## 10.3.9a.10 MBMS Short transmission identity

Includes a short identity of the MBMS transmission identity, which concerns a session of a specific service.

| Information element/Group name   | Need | Multi | Type and reference                       | Semantics<br>description  | Version |
|----------------------------------|------|-------|--|---|---------|
| MBMS short transmission identity | MP   |       | Integer<br>(1maxMB<br>MSservUn<br>modif) | Reference/ index to a transmission listed in the MBMS MODIFIED SERVICES INFORMATION or MBMS UNMODIFIED SERVICES INFORMATION | REL-6   |

#### 10.3.9a.10a MBMS Soft Combining Timing Offset

Indicates the timing offset applied in the CFN calculation in sub-clause 8.5.15.5 for a secondary CCPCH carrying only MBMS logical channels. It is used for FDD only.

| Information<br>Element/Group name | Need | Multi | Type and reference | Semantics description         | Version |
|-----------------------------------|------|-------|--------------------|-------------------------------|---------|
| >MBMS Soft Combining              | MP   |       | Integer (0,        | Timing offset applied in the  | REL-6   |
| Timing Offset                     |      |       | 10, 20, 40)        | CFN calculation in sub-clause |         |
|                                   |      |       |                    | 8.5.15.5, in ms.              |         |

#### 10.3.9a.11 MBMS specific timers and counters

Includes MBMS specific timers and counters.

| Information element/Group name | Need | Multi | Type and reference  | Semantics description                         | Version |
|--------------------------------|------|-------|---|---|---------|
| T318                           | MD   |       | Integer(25<br>0 2000<br>by step of<br>250, 3000,<br>4000,<br>6000,<br>8000,<br>10000,<br>12000,<br>16000) | Value in milliseconds. Default value is 1000. | REL-6   |

#### 10.3.9a.12 MBMS Transmission identity

Includes information about the MBMS transmission identity, which concerns a session of a specific service.

| Information element/Group name | Need | Multi | Type and reference                       | Semantics<br>description | Version |
|--------------------------------|------|-------|--|--------------------------|---------|
| MBMS Service ID                | MP   |       | MBMS<br>Service<br>identity<br>10.3.9a.8 |                          | REL-6   |
| MBMS Session ID                | OP   |       | MBMS<br>Session<br>identity<br>10.3.9a.9 |                          | REL-6   |

#### 10.3.9a.12a MBSFN frequency list

| Information Element/Group name | Need | Multi  | Type and reference               | Semantics description                     | Version |
|--------------------------------|------|--|----------------------------------|---|---------|
| MBSFN frequency list           | MP   | 0 to<br><maxmbs<br>FNclusters<br/>&gt;</maxmbs<br> |                                  |   | REL-7   |
| >MBSFN frequency               | MP   |  | Frequency<br>info<br>10.3.6.36   |   | REL-7   |
| >Cell parameter ID             | OP   | <0127>   | Cell<br>parameter Id<br>10.3.6.9 | Only for 1.28 Mcps<br>TDD [32].<br>NOTE 1 | REL-7   |

NOTE 1: For 1.28 Mcps TDD the IE "Cell Parameter ID" indicates the cell which is providing MBMS service in MBSFN only mode on the corresponding frequency; if it is not included, the IE "MBSFN frequency" indicates the secondary frequency providing MBMS service in non-MBSFN only mode of current multifrequency cell.

#### 10.3.9a.12b MBSFN TDM Information List

| Information element/Group name | Need | Multi   | Type and reference                                       | Semantics<br>description | Version |
|--------------------------------|------|---|--|--------------------------|---------|
| MBSFN TDM Information<br>List  | MP   | 1 to<br><maxm<br>BMSse<br/>rvUnmo<br/>dif&gt;</maxm<br> |  |                          | REL-7   |
| >MBMS short<br>transmission ID | MP   |   | MBMS<br>Short<br>transmissio<br>n identity<br>10.3.9a.10 |                          | REL-7   |
| >TDM_Rep                       | MP   |   | Integer<br>(29)  |                          | REL-7   |
| >TDM_Offset                    | MP   |   | Integer<br>(08)  |                          | REL-7   |
| >TDM_Length                    | MP   |   | Integer<br>(18)  |                          | REL-7   |

## 10.3.9a.13 MCCH configuration information

Includes information about the MCCH configuration.

| Information element/Group name  | Need        | Multi | Type and reference             | Semantics<br>description  | Version |
|---------------------------------|-------------|-------|--------------------------------|---|---------|
| Access Info Period coefficient  | MP          |       | Integer<br>(03)                | Represents a, the access information coefficient. The number of repetitions per modification period equals 2 <sup>a</sup> while the actual access information period, in number of frames, equals MP DIV 2 <sup>a</sup> | REL-6   |
| Repetition Period coefficient   | MP          |       | Integer<br>(03)                | Represents <i>r</i> , the repetition period coefficient. The number of repetitions per modification period equals 2 <sup>r</sup> while the actual repetition period, in number of frames, equals MP DIV 2 <sup>r</sup>  | REL-6   |
| Modification period coefficient | MP          |       | Integer<br>(710)               | Represents <i>m</i> , the modification period coefficient. The actual modification period (MP), in number of frames, equals 2 <sup>m</sup>  | REL-6   |
| RLC info                        | MP          |       | RLC info<br>MBMS<br>10.3.4.23a |   | REL-6   |
| TCTF presence                   | CV-<br>MBMS |       | Enumerate<br>d (false)         | By default the TCTF is present even though the FACH only carries one logical channel (type). When this IE is included, the TCTF is absent   | REL-6   |

| Condition | Explanation   |
|-----------|---|
| MBMS      | This IE is not needed if the IE is contained within the |
|           | IE "Secondary CCPCH system information",                |
|           | otherwise the IE is optional.                           |

## 10.3.9a.14 MICH configuration information

Includes information about the MICH configuration.

| Information element/Group name | Need | Multi    | Type and reference            | Semantics<br>description | Version |
|--------------------------------|------|----------|-------------------------------|--------------------------|---------|
| MICH Power offset              | MP   |          | MICH                          | •                        | REL-6   |
|                                |      |          | Power                         |                          |         |
|                                |      |          | offset                        |                          |         |
| 0110105                        |      |          | 10.3.9a.15                    |                          |         |
| CHOICE mode                    | MP   |          |                               |                          | REL-6   |
| >FDD                           |      |          | 1.                            |                          | REL-6   |
| >>Channelisation code          | MP   |          | Integer<br>(0.255)            |                          | REL-6   |
| >>Number of NI per             | MP   |          | Integer                       |                          | REL-6   |
| frame                          |      |          | (18, 36, 72, 144)             |                          |         |
| >>STTD indicator               | MP   |          | STTD                          |                          | REL-6   |
|                                |      |          | Indicator                     |                          |         |
|                                |      |          | 10.3.6.78                     |                          |         |
| >TDD                           |      |          |                               |                          | REL-6   |
| >>Timeslot number              | MP   | 1        | Timeslot                      |                          | REL-6   |
|                                |      |          | number                        |                          |         |
|                                |      | 1        | 10.3.6.84                     |                          |         |
| >>Midamble shift and           | MP   | 1        | Midamble                      | For 1.28 Mcps TDD, if    | REL-6   |
| burst type                     |      | 1        | shift and                     | the cell is operating in |         |
|                                |      |          | burst type                    | MBSFN mode, the UE       |         |
|                                |      |          | 10.3.6.41                     | shall ignore the         |         |
|                                |      |          |                               | contents of this IE.     |         |
| >>CHOICE TDD option            | MP   |          |                               |                          | REL-6   |
| >>>3.84 Mcps TDD               |      |          |                               |                          | REL-6   |
| >>>Channelisation code         | MP   |          | Enumerate d ( (16/1)(16 /16)) |                          | REL-6   |
| >>>7.68 Mcps TDD               |      |          | 710))                         |                          | REL-7   |
| >>>>Channelisation code        | MP   |          | Enumerate                     |                          | REL-7   |
| Griam Gueanen Gode             |      |          | d (                           |                          |         |
|                                |      |          | (32/1)(32                     |                          |         |
|                                |      |          | /32))                         |                          |         |
| >>>1.28 Mcps TDD               |      |          | 702))                         |                          | REL-6   |
| >>>Codes list                  | MP   | 1 to 2   |                               |                          | REL-6   |
| >>>>Channelisation             | MP   | 1 2      | Enumerate                     |                          | REL-6   |
| code                           |      | 1        | d (                           |                          |         |
|                                |      |          | (16/1)(16                     |                          |         |
|                                |      |          | /16))                         |                          |         |
| >>>> MBSFN Special             | OP   | 1        | Time Slot                     | For 1.28 Mcps TDD        | REL-7   |
| Time Slot                      |      | 1        | LCR                           | MBSFN only mode, this    |         |
|                                |      | 1        | Extension                     | IE indicates the         |         |
|                                |      | 1        | 10.3.6.83a                    | SCCPCH is deployed       |         |
|                                |      | 1        |                               | on the MBSFN Special     |         |
|                                |      | 1        |                               | Time Slot [30]. The IE   |         |
|                                |      | 1        |                               | 'Timeslot number' shall  |         |
|                                |      |          |                               | be ignored if this IE    |         |
|                                |      | <u> </u> |                               | appears.                 |         |
| >>Repetition                   | MD   |          | Enumerate                     | Default value is         | REL-6   |
| period/length                  |      | 1        | d((4/2),(8/2                  | "(64/2)".                |         |
|                                |      | 1        | ),                            |                          |         |
|                                |      | 1        | (8/4),(16/2)                  |                          |         |
|                                |      | 1        | , (16/4),                     |                          |         |
|                                |      |          | (32/2),(32/                   |                          | I       |

|                                      |    | 4),(64/2),(6<br>4/4))                      |  |       |
|--------------------------------------|----|--|--|-------|
| >>Offset                             | MP | Integer<br>(0Repetit<br>ion period -<br>1) | SFN mod<br>Repetitionperiod =<br>Offset.   | REL-6 |
| >>MBMS Notification indicator length | MD | Integer (4,<br>8, 16)                      | Indicates the length of one MBMS Notification indicator in bits. Default value is 4. | REL-6 |

#### 10.3.9a.15 MICH Power offset

This is the power transmitted on the MICH minus power of the Primary CPICH in FDD and Primary CCPCH Tx Power in TDD.

| Information<br>Element/Group name | Need | Multi | Type and reference | Semantics description | Version |
|-----------------------------------|------|-------|--------------------|-----------------------|---------|
| MICH Power offset                 | MP   |       | Integer(-10<br>+5) | Offset in dB          | REL-6   |

#### 10.3.9a.16 MSCH configuration information

Includes information about the MSCH configuration.

| Information element/Group name | Need | Multi | Type and reference                                 | Semantics description   | Version |
|--------------------------------|------|-------|--|---|---------|
| MSCH Scheduling information    | MP   |       |  | For FDD, scheduling information is provided starting at (SFN – (SCTO div 10ms)) mod MSCH_REP = MSCH_OFF For TDD, scheduling information is provided starting at SFN mod MSCH_REP = MSCH_OFF | REL-6   |
| >Scheduling period             | MD   |       | Enumerate<br>d (32, 64,<br>128, 256,<br>512, 1024) | The period, in number of frames, between MBMS scheduling messages (MSCH_REP) Default value is the value included in the MBMS GENERAL INFORMATION message                                    | REL-6   |
| >Scheduling offset             | MD   |       | Integer<br>(0(MSCH<br>_REP-1))                     | The position of MBMS scheduling messages relative to timing of the corresponding cell (MSCH_OFF) Default value is the value included in the MBMS GENERAL INFORMATION message                | REL-6   |
| >RLC info                      | MD   |       | RLC info<br>MBMS<br>10.3.4.23a                     | Default value is the one included in the MBMS GENERAL INFORMATION message   | REL-6   |
| TCTF presence                  | OP   |       | Enumerate<br>d (false)                             | By default the TCTF is present even though the FACH only carries one logical channel (type). When this IE is included, the TCTF is absent   | REL-6   |

## 10.3.10 Multiplicity values and type constraint values

The following table includes constants that are either used as multi bounds (name starting with "max") or as high or low value in a type specification (name starting with "lo" or "hi"). Constants are specified only for values appearing more than once in the RRC specification. In case a constant is related to one or more other constants, an expression is included in the "value" column instead of the actual value.

| Constant       | Explanation                                 | Value           | Version |
|----------------|---|-----------------|---------|
| CN information |   |                 |         |
| maxCNdomains   | Maximum number of CN domains                | 4               |         |
| UTRAN mobility |   |                 |         |
| information    |   |                 |         |
| maxRAT         | Maximum number or Radio Access Technologies | maxOtherRAT + 1 |         |
| maxOtherRAT    | Maximum number or other Radio Access        | 15              |         |
|                | Technologies                                |                 |         |

| Constant                    | Explanation  | Value   | Version |
|-----------------------------|--|---|---------|
| maxURA                      | Maximum number of URAs in a cell   | 8   |         |
| maxInterSysMessages         | Maximum number of Inter System Messages  | 4   |         |
| maxRABsetup                 | Maximum number of RABs to be established   | 16  |         |
| UE information              |  |   |         |
| maxtransactions             | Maximum number of parallel RRC transactions in downlink  | 25  |         |
| maxPDCPalgoType             | Maximum number of PDCP algorithm types   | 8   |         |
| maxFreqBandsFDD             | Maximum number of frequency bands supported by the UE as defined in [21]   | 8   |         |
| maxFreqBandsFDD-ext         | Maximum number of frequency bands as defined in [21] and treated by RRC  | 22  | REL-6   |
| maxFreqBandsTDD             | Maximum number of frequency bands supported by the UE as defined in [22]   | 4   |         |
| maxFreqBandsGSM             | Maximum number of frequency bands supported by the UE as defined in [45]   | 16  |         |
| maxPage1                    | Number of UEs paged in the Paging Type 1 message   | 8   |         |
| maxSystemCapability         | Maximum number of system specific capabilities that can be requested in one message.                                     | 16  |         |
| MaxURNTIgroup               | Maximum number of U-RNTI groups in one message   | 8   | REL-5   |
| maxCommonHRNTI              | Maximum number of common H-RNTI per cell   | 4   | REL-7   |
| RB information              | 1  |   |         |
| maxPredefConfig             | Maximum number of predefined configurations  | 16  |         |
| maxRB                       | Maximum number of RBs  | 32  |         |
| maxSRBsetup                 | Maximum number of signalling RBs to be established   | 8   |         |
| maxRBperRAB                 | Maximum number of RBs per RAB  | 8   |         |
| maxRBallRABs                | Maximum number of non signalling RBs   | 27  |         |
| maxRBperTrCh                | Maximum number of RB per TrCh  | 16  | REL-6   |
| maxRBMuxOptions             | Maximum number of RB multiplexing options  | 8   |         |
| maxLoCHperRLC               | Maximum number of logical channels per RLC entity  | 2   |         |
| maxRLCPDUsizePerLogCha<br>n | Maximum number of RLC PDU sizes per logical channel mapped on E-DCH  | 32  | REL-6   |
| MaxROHC-PacketSizes         | Maximum number of packet sizes that are allowed to be produced by ROHC.  | 16  |         |
| MaxROHC-Profiles            | Maximum number of profiles supported by ROHC on a given RB.  | 8   |         |
| maxRFC 3095-CID             | Maximum number of available CID values per radio bearer  | 16384   | REL-5   |
| TrCH information            |  |   |         |
| maxCommonQueueID            | Maximum number of common Mac-ehs queues  | 2   | REL-7   |
| maxE-DCHMACdFlow            | Maximum number of E-DCH MAC-d flows  | 8   | REL-6   |
| MaxHProcesses               | Maximum number of H-ARQ processes  | 8   | REL-5   |
| MaxHSDSCH_TB_index          | Maximum number of TB set size configurations for the HS-DSCH.  | 64 (FDD and 1.28<br>MCPS TDD); 512<br>(3.84 Mcps TDD);<br>1024 (7.68 Mcps<br>TDD) | REL-5   |
| maxMACdPDUSizes             | Maximum number of MAC-d PDU sizes per queue permitted for MAC-hs   | 8   | REL-5   |
| maxTrCH                     | Maximum number of transport channels used in one direction (UL or DL)  | 32  |         |
| maxTrCHpreconf              | Maximum number of preconfigured Transport channels, per direction  | 16  |         |
| maxCCTrCH                   | Maximum number of CCTrCHs  | 8   |         |
| maxQueueID                  | Maximum number of Mac-hs queues  | 8   | REL-5   |
| MaxTF                       | Maximum number of different transport formats that can be included in the Transport format set for one transport channel | 32  |         |
| maxTFC                      | Maximum number of Transport Format Combinations  | 1024  |         |

| Constant                | Explanation   | Value                         | Version |
|-------------------------|---|-------------------------------|---------|
| maxTFCsub               | Maximum number of Transport Format                                | 1024                          | Version |
| IIIAXII CSUD            | Combinations Subset   | 1024                          |         |
| maxSIBperMsg            | Maximum number of complete system information                     | 16                            |         |
| maxorbpenvisg           | blocks per SYSTEM INFORMATION message                             |                               |         |
| maxSIB                  | Maximum number of references to other system                      | 32                            |         |
| maxerb                  | information blocks.   | 02                            |         |
| maxSIB-FACH             | Maximum number of references to system                            | 8                             |         |
|                         | information blocks on the FACH                                    |                               |         |
| PhyCH information       |   |                               |         |
| maxHSSCCHs              | Maximum number of HSSCCH codes that can be                        | 4                             | REL-5   |
|                         | assigned to a UE  |                               |         |
| maxHS-SCCHLessTrBlk     | Maximum number of HS-DSCH Transport Block                         | [4]                           | REL-7   |
|                         | Sizes used for HS-SCCH-less operation                             |                               |         |
|                         |   |                               |         |
| maxTDD128Carrier        | The maximum number of carriers for 1.28 Mcps                      | 6                             | REL-7   |
|                         | TDD   |                               |         |
| maxAC                   | Maximum number of access classes                                  | 16                            |         |
| maxASC                  | Maximum number of access service classes                          | 8                             |         |
| maxASCmap               | Maximum number of access class to access                          | 7                             |         |
| •                       | service classes mappings  |                               |         |
| maxASCpersist           | Maximum number of access service classes for                      | 6                             |         |
|                         | which persistence scaling factors are specified                   |                               |         |
| maxPRACH                | Maximum number of PRACHs in a cell                                | 16                            |         |
| MaxPRACH_FPACH          | Maximum number of PRACH / FPACH pairs in a                        | 8                             | REL-4   |
|                         | cell (1.28 Mcps TDD)  |                               |         |
| maxFACHPCH              | Maximum number of FACHs and PCHs mapped                           | 8                             |         |
|                         | onto one secondary CCPCHs   |                               |         |
| maxRL                   | Maximum number of radio links                                     | 8                             |         |
| maxEDCHRL               | Maximum number of E-DCH radio links                               | 4                             | REL-6   |
| maxSCCPCH               | Maximum number of secondary CCPCHs per cell                       | 16                            |         |
| maxDPDCH-UL             | Maximum number of DPDCHs per cell                                 | 6                             |         |
| maxDPCH-DLchan          | Maximum number of channelisation codes used                       | 8                             |         |
|                         | for DL DPCH   |                               |         |
|                         | Maniferon and Application   | (0)                           |         |
| maxPUSCH                | Maximum number of PUSCHs  | (8)                           |         |
| maxPDSCH<br>maxTS       | Maximum number of PDSCHs  Maximum number of timeslots used in one | 8                             |         |
| max15                   |   | 14 (3.84 Mcps<br>TDD and 7.68 |         |
|                         | direction (UL or DL)  | Mcps TDD)                     |         |
|                         |   | 6 (1.28 Mcps                  | REL-4   |
|                         |   | TDD)                          | IXLL-4  |
| hiPUSCHidentities       | Maximum number of PUSCH Identities                                | 64                            |         |
| hiPDSCHidentities       | Maximum number of PDSCH Identities                                | 64                            |         |
| maxNumE-AGCH            | Maximum number of E-AGCHs (TDD)                                   | 4                             | REL-7   |
| maxNumE-HICH            | Maximum number of E-HICHs (1.28 Mcps TDD)                         | 4                             | REL-7   |
| Measurement information | Waximum number of E Thoris (1.20 Meps 100)                        | _ <del>-</del>                | IXEL /  |
| maxTGPS                 | Maximum number of transmission gap pattern                        | 6                             |         |
| max1616                 | sequences   |                               |         |
| maxAdditionalMeas       | Maximum number of additional measurements for                     | 4                             |         |
| max taditionalivicas    | a given measurement identity                                      | -                             |         |
| maxMeasEvent            | Maximum number of events that can be listed in                    | 8                             |         |
| maximoas_vent           | measurement reporting criteria                                    |                               |         |
| maxMeasParEvent         | Maximum number of measurement parameters                          | 2                             |         |
|                         | (e.g. thresholds) per event                                       |                               |         |
| maxMeasIntervals        | Maximum number of intervals that define the                       | 1                             |         |
|                         | mapping function between the measurements for                     |                               |         |
|                         | the cell quality Q of a cell and the representing                 |                               |         |
|                         | quality value   |                               |         |
| maxCellMeas             | Maximum number of cells to measure                                | 32                            |         |
| maxReportedGSMCells     | Maximum number of GSM cells to be reported                        | 8                             |         |
| maxFreq                 | Maximum number of frequencies to measure                          | 8                             |         |
| maxSat                  | Maximum number of satellites to measure                           | 16                            |         |

| Constant              | Explanation   | Value | Version |
|-----------------------|---|-------|---------|
| maxGANSSSat           | Maximum number of GANSS satellites to measure                                       | 64    | REL-7   |
| maxGANSS              | Maximum number of GANSS supported   | 8     | REL-7   |
| maxSgnType            | Maximum number of additional signals in GANSS to measure                            | 8     | REL-7   |
| maxSatClockModels     | Maximum number of clock models in a GANSS   | 4     | REL-7   |
| maxSatAlmanacStorage  | Maximum number of satellites for which to store GPS Almanac information             | 32    |         |
| HiRM                  | Maximum number that could be set as rate matching attribute for a transport channel | 256   |         |
| Frequency information |   |       |         |
| MaxFDDFreqList        | Maximum number of FDD carrier frequencies to be stored in USIM                      | 4     |         |
| MaxTDDFreqList        | Maximum number of TDD carrier frequencies to be stored in USIM                      | 4     |         |
| MaxFDDFreqCellList    | Maximum number of neighbouring FDD cells to be stored in USIM                       | 32    |         |
| MaxTDDFreqCellList    | Maximum number of neighbouring TDD cells to be stored in USIM                       | 32    |         |
| MaxGSMCellList        | Maximum number of GSM cells to be stored in USIM                                    | 32    |         |
| Other information     |   |       |         |
| MaxGERANSI            | Maximum number of GERAN SI blocks that can be provided as part of NACC information  | 8     | REL-5   |
| maxNumGSMFreqRanges   | Maximum number of GSM Frequency Ranges to store                                     | 32    |         |
| MaxNumFDDFreqs        | Maximum number of FDD centre frequencies to store                                   | 8     |         |
| MaxNumTDDFreqs        | Maximum number of TDD centre frequencies to store                                   | 8     |         |
| maxNumCDMA200Freqs    | Maximum number of CDMA2000 centre frequencies to store                              | 8     |         |

| Constant             | Explanation   | Value | Version |
|----------------------|---|-------|---------|
| maxGSMTargetCells    | Maximum number of GSM target cells  | 32    | REL-6   |
| MBMS information     |   |       |         |
| maxMBMS-CommonCCTrCh | Maximum number of CCTrCh configurations included in the MBMS COMMON P-T-M RB INFORMATION message        | 32    | REL-6   |
| maxMBMS-CommonPhyCh  | Maximum number of PhyCh configurations included in the MBMS COMMON P-T-M RB INFORMATION message         | 32    | REL-6   |
| maxMBMS-CommonRB     | Maximum number of RB configurations included in the MBMS COMMON P-T-M RB INFORMATION message            | 32    | REL-6   |
| maxMBMS-CommonTrCh   | Maximum number of TrCh configurations included in the MBMS COMMON P-T-M RB INFORMATION message          | 32    | REL-6   |
| maxMBMS-Freq         | Maximum number of MBMS preferred frequencies  | 4     | REL-6   |
| maxMBMS-L1CP         | Maximum number of periods in which layer 1 combining applies  | 4     | REL-6   |
| maxMBMSservCount     | Maximum number of MBMS services in a Access Info message  | 8     | REL-6   |
| maxMBMSservModif     | Maximum number of MBMS services in a MBMS MODIFIED SERVICES INFORMATION message                         | 32    | REL-6   |
| maxMBMSservSched     | Maximum number of MBMS services in a MBMS SCHEDULING INFORMATION message                                | 16    | REL-6   |
| maxMBMSservSelect    | Maximum number of MBMS Selected Services in a CELL UPDATE or RRC CONNECTION REQUEST message             | 8     | REL-6   |
| maxMBMSservUnmodif   | Maximum number of MBMS services in a MBMS UNMODIFIED SERVICES INFORMATION message                       | 64    | REL-6   |
| maxMBMSTransmis      | Maximum number of transmissions for which scheduling information is provided within a scheduling period | 4     | REL-6   |
| maxMBMS-Services     | Maximum number of MBMS services the UE stores in the variable MBMS_ACTIVATED_SERVICES                   | 64    | REL-6   |
| maxMBSFNclusters     | Maximum number of MBSFN clusters indicated in system information  | 16    | REL-7   |

# 11 Message and Information element abstract syntax (with ASN.1)

This clause contains definitions for RRC PDUs and IEs using a subset of ASN.1 as specified in [14]. PDU and IE definitions are grouped into separate ASN.1 modules.

#### 11.0 General

Some messages and/or IEs may include one or more IEs with name "dummy" that are included only in the ASN.1. The UE should avoid sending information elements that are named "dummy" to UTRAN. Likewise, UTRAN should avoid sending IEs with name "dummy" to the UE. If the UE anyhow receives an information element named "dummy", it shall ignore the IE and process the rest of the message as if the IE was not included.

NOTE: An IE with name "dummy" concerns an information element that was (erroneously) included in a previous version of the specification and has been removed by replacing it with a dummy with same type.

The UE shall only include the "variable length extension container" when it sends a non critical extension that according to this specification shall be transferred within this container.

If the abstract syntax of an IE is defined using the ASN.1 type "BIT STRING", and this IE corresponds to a functional IE definition in tabular format, in which the significance of bits is semantically defined, the following general rule shall be applied:

The bits in the ASN.1 bit string shall represent the semantics of the functional IE definition in decreasing order of bit significance;

- with the first (or leftmost) bit in the bit string representing the most significant bit; and
- with the last (or rightmost) bit in the bit string representing the least significant bit.

## 11.1 General message structure

Class-definitions DEFINITIONS AUTOMATIC TAGS ::= BEGIN IMPORTS ActiveSetUpdate, ActiveSetUpdateComplete, ActiveSetUpdateFailure, AssistanceDataDelivery, CellChangeOrderFromUTRAN CellChangeOrderFromUTRANFailure, CellUpdate, CellUpdateConfirm-CCCH, CellUpdateConfirm, CounterCheck, CounterCheckResponse, DownlinkDirectTransfer, HandoverToUTRANComplete. InitialDirectTransfer, HandoverFromUTRANCommand-GERANIu, HandoverFromUTRANCommand-GSM, HandoverFromUTRANCommand-CDMA2000. HandoverFromUTRANFailure, MBMSAccessInformation, MBMSCommonPTMRBInformation, MBMSCurrentCellPTMRBInformation, MBMSGeneralInformation, MBMSModificationRequest MBMSModifiedServicesInformation, MBMSNeighbouringCellPTMRBInformation, MBMSSchedulingInformation, MBMSUnmodifiedServicesInformation, MeasurementControl, MeasurementControlFailure, MeasurementReport, PagingType1, PagingType2, PhysicalChannelReconfiguration, PhysicalChannelReconfigurationComplete, PhysicalChannelReconfigurationFailure, PhysicalSharedChannelAllocation, PUSCHCapacityRequest, RadioBearerReconfiguration, RadioBearerReconfigurationComplete, RadioBearerReconfigurationFailure, RadioBearerRelease, RadioBearerReleaseComplete, RadioBearerReleaseFailure. RadioBearerSetup, RadioBearerSetupComplete, RadioBearerSetupFailure, RRCConnectionReject, RRCConnectionRelease. RRCConnectionRelease-CCCH, RRCConnectionReleaseComplete, RRCConnectionRequest, RRCConnectionSetup RRCConnectionSetupComplete, RRCStatus,

SecurityModeCommand,

```
SecurityModeComplete,
   SecurityModeFailure,
   SignallingConnectionRelease,
   SignallingConnectionReleaseIndication,
   SystemInformation-BCH,
   SystemInformation-FACH,
   SystemInformationChangeIndication,
   TransportChannelReconfiguration,
   {\tt TransportChannelReconfigurationComplete,}
   TransportChannelReconfigurationFailure,
   TransportFormatCombinationControl,
   TransportFormatCombinationControlFailure,
   UECapabilityEnquiry,
   UECapabilityInformation,
   UECapabilityInformationConfirm,
   UplinkDirectTransfer.
   UplinkPhysicalChannelControl,
   URAUpdate,
   URAUpdateConfirm,
   URAUpdateConfirm-CCCH,
   UTRANMobilityInformation,
   UTRANMobilityInformationConfirm,
   {\tt UTRANMobilityInformationFailure}
FROM PDU-definitions
-- User Equipment IEs :
   IntegrityCheckInfo
FROM InformationElements;
__*********************
-- Downlink DCCH messages
__********************
DL-DCCH-Message ::= SEQUENCE {
   integrityCheckInfo IntegrityCheckInfo
                                                 OPTIONAL,
                          DL-DCCH-MessageType
   message
}
DL-DCCH-MessageType ::= CHOICE {
   activeSetUpdate
                                      ActiveSetUpdate.
   assistanceDataDelivery
                                      AssistanceDataDelivery,
   cellChangeOrderFromUTRAN
                                      CellChangeOrderFromUTRAN,
   {\tt cellUpdateConfirm}
                                      CellUpdateConfirm,
   counterCheck
                                      CounterCheck,
   downlinkDirectTransfer
                                      DownlinkDirectTransfer.
   handoverFromUTRANCommand-GSM
                                      HandoverFromUTRANCommand-GSM,
   handoverFromUTRANCommand-CDMA2000 HandoverFromUTRANCommand-CDMA2000,
   measurementControl
                                       MeasurementControl,
   pagingType2
                                       PagingType2,
   physicalChannelReconfiguration
                                       PhysicalChannelReconfiguration,
   physicalSharedChannelAllocation
                                       PhysicalSharedChannelAllocation,
   radioBearerReconfiguration
                                       RadioBearerReconfiguration,
   radioBearerRelease
                                       RadioBearerRelease,
   radioBearerSetup
                                       RadioBearerSetup,
   rrcConnectionRelease
                                       RRCConnectionRelease,
   security Mode Command
                                       SecurityModeCommand,
   signallingConnectionRelease
                                       SignallingConnectionRelease,
   transportChannelReconfiguration
                                       TransportChannelReconfiguration,
   transportFormatCombinationControl
                                       TransportFormatCombinationControl,
                                       UECapabilityEnquiry,
   ueCapabilityEnquiry
   ueCapabilityInformationConfirm
                                       UECapabilityInformationConfirm,
   uplinkPhysicalChannelControl
                                       UplinkPhysicalChannelControl,
   uraUpdateConfirm
                                       URAUpdateConfirm,
   utranMobilityInformation
                                       UTRANMobilityInformation,
   handoverFromUTRANCommand-GERANIu
                                       HandoverFromUTRANCommand-GERANIu,
   {\tt mbmsModifiedServicesInformation}
                                       MBMSModifiedServicesInformation,
   spare5
                                       NULL.
   spare4
                                       NULL,
   spare3
                                       NULL,
   spare2
                                       NULL,
   spare1
                                      NULL
}
__*******************
-- Uplink DCCH messages
```

```
__**********************
UL-DCCH-Message ::= SEQUENCE {
   integrityCheckInfo IntegrityCheckInfo
                                               OPTIONAL,
   message
                         UL-DCCH-MessageType
}
UL-DCCH-MessageType ::= CHOICE {
   activeSetUpdateComplete
                                     ActiveSetUpdateComplete,
   activeSetUpdateFailure
                                    ActiveSetUpdateFailure,
   cellChangeOrderFromUTRANFailure
                                    CellChangeOrderFromUTRANFailure,
   counterCheckResponse
                                     CounterCheckResponse,
   handoverToUTRANComplete
                                    HandoverToUTRANComplete,
   initialDirectTransfer
                                     InitialDirectTransfer,
   handoverFromUTRANFailure
                                    HandoverFromUTRANFailure,
   measurementControlFailure
                                     MeasurementControlFailure,
   measurementReport
                                     MeasurementReport,
   physicalChannelReconfigurationComplete
                                     PhysicalChannelReconfigurationComplete,
   physicalChannelReconfigurationFailure
                                     PhysicalChannelReconfigurationFailure,
   radioBearerReconfigurationComplete
                                     RadioBearerReconfigurationComplete,
   radioBearerReconfigurationFailure
                                     RadioBearerReconfigurationFailure,
   radioBearerReleaseComplete
                                     RadioBearerReleaseComplete,
   radioBearerReleaseFailure
                                     RadioBearerReleaseFailure,
   radioBearerSetupComplete
                                     RadioBearerSetupComplete,
   radioBearerSetupFailure
                                     RadioBearerSetupFailure,
   rrcConnectionReleaseComplete
                                    RRCConnectionReleaseComplete,
   rrcConnectionSetupComplete
                                     RRCConnectionSetupComplete,
   rrcStatus
                                     RRCStatus,
   securityModeComplete
                                     SecurityModeComplete,
   securityModeFailure
                                     SecurityModeFailure,
   \verb|signallingConnectionReleaseIndication|\\
                                     SignallingConnectionReleaseIndication,
   transportChannelReconfigurationComplete
                                     TransportChannelReconfigurationComplete,
   transportChannelReconfigurationFailure
                                     {\tt TransportChannelReconfigurationFailure,}
   transportFormatCombinationControlFailure
                                     TransportFormatCombinationControlFailure,
                                     UECapabilityInformation,
   ueCapabilityInformation
   uplinkDirectTransfer
                                     UplinkDirectTransfer,
   utranMobilityInformationConfirm
                                    UTRANMobilityInformationConfirm,
   utranMobilityInformationFailure
                                    UTRANMobilityInformationFailure,
   mbmsModificationRequest
                                     MBMSModificationRequest,
                                     NULL
   spare1
}
__*******************
-- Downlink CCCH messages
__********************
DL-CCCH-Message ::= SEQUENCE {
   integrityCheckInfo IntegrityCheckInfo
                                               OPTIONAL,
                         DL-CCCH-MessageType
   message
}
DL-CCCH-MessageType ::= CHOICE {
   cellUpdateConfirm
                                     CellUpdateConfirm-CCCH,
                                    RRCConnectionReject,
   rrcConnectionReject
   rrcConnectionRelease
                                     RRCConnectionRelease-CCCH,
   rrcConnectionSetup
                                     RRCConnectionSetup,
   uraUpdateConfirm
                                     URAUpdateConfirm-CCCH,
   spare3
                                     NULL,
                                     NULL,
   spare2
   spare1
                                     NULL
}
__**********************
-- Uplink CCCH messages
__********************
UL-CCCH-Message ::= SEQUENCE {
```

```
integrityCheckInfo IntegrityCheckInfo
                                       OPTIONAL,
                     UL-CCCH-MessageType
  message
}
UL-CCCH-MessageType ::= CHOICE {
  cellUpdate
                               CellUpdate,
                               RRCConnectionRequest,
   rrcConnectionRequest
                               URAUpdate,
  uraUpdate
   spare
                               NULL
__********************
-- PCCH messages
__*********************
PCCH-Message ::= SEQUENCE {
              PCCH-MessageType
  message
}
{\tt PCCH-MessageType} \ ::= \ {\tt CHOICE} \ \big\{
  pagingType1
                               PagingType1,
   spare
}
__********************
-- Downlink SHCCH messages
__*********************
DL-SHCCH-Message ::= SEQUENCE {
                     DL-SHCCH-MessageType
  message
}
DL-SHCCH-MessageType ::= CHOICE {
                             PhysicalSharedChannelAllocation,
  physicalSharedChannelAllocation
   spare
                               NULL
}
__********************
-- Uplink SHCCH messages
__*********************
{\tt UL-SHCCH-Message} \ ::= \ {\tt SEQUENCE} \ \big\{
   message
                     UL-SHCCH-MessageType
}
UL-SHCCH-MessageType ::= CHOICE {
  puschCapacityRequest
                               PUSCHCapacityRequest,
                               NULL
   spare
}
__********************
-- BCCH messages sent on FACH
__*******************
BCCH-FACH-Message ::= SEQUENCE {
                  BCCH-FACH-MessageType
  message
BCCH-FACH-MessageType ::= CHOICE {
   systemInformation
                               SystemInformation-FACH,
   systemInformationChangeIndication
                              SystemInformationChangeIndication,
   spare2
                               NULL,
   spare1
                               NULL
}
__*********************
-- BCCH messages sent on BCH
```

```
__*****************
BCCH-BCH-Message ::= SEQUENCE {
                        SystemInformation-BCH
__********************
-- MCCH messages
__*********************
MCCH-Message ::= SEQUENCE {
                      MCCH-MessageType
   message
MCCH-MessageType ::= CHOICE {
   mbmsAccessInformationMBMSAccessInformation,mbmsCommonPTMRBInformationMBMSCommonPTMRBInformation,mbmsCurrentCellPTMRBInformationMBMSCurrentCellPTMRBInformation,mbmsGeneralInformationMBMSGeneralInformation,mbmsModifiedServicesInformation,MBMSModifiedServicesInformation,
   {\tt mbmsAccessInformation}
                                      MBMSAccessInformation,
   {\tt mbmsNeighbouringCellPTMRBInformation}
                                       MBMSNeighbouringCellPTMRBInformation,
                                       MBMSUnmodifiedServicesInformation,
   mbmsUnmodifiedServicesInformation
    spare9
                                        NULL,
    spare8
                                        NULL,
                                        NULL,
    spare7
   spare6
                                        NULL,
    spare5
                                        NULL,
    spare4
                                        NULL,
    spare3
                                        NULL,
                                        NULL,
    spare2
    spare1
                                        NULL
}
__**********************
-- MSCH messages
__********************
MSCH-Message ::= SEQUENCE {
   message
                 MSCH-MessageType
MSCH-MessageType ::= CHOICE {
   mbmsSchedulingInformation
                                       MBMSSchedulingInformation,
    spare3
                                        NULL,
    spare2
                                        NULL,
                                        NULL
    spare1
}
END
```

#### 11.2 PDU definitions

IMPORTS

```
-- Core Network IEs :
   CN-DomainIdentity,
   CN-InformationInfo.
   CN-InformationInfo-r6,
   CN-InformationInfoFull,
   NAS-Message,
   PagingRecordTypeID,
PLMN-Identity,
-- UTRAN Mobility IEs :
   CellIdentity,
CellIdentity-PerRL-List,
   URA-Identity,
-- User Equipment IEs :
   AccessStratumReleaseIndicator,
   ActivationTime,
   C-RNTT.
   CapabilityUpdateRequirement,
   CapabilityUpdateRequirement-r4,
   CapabilityUpdateRequirement-r4-ext,
   CapabilityUpdateRequirement-r5,
   CapabilityUpdateRequirement-v770ext,
   CapabilityUpdateRequirement-r7,
   CellUpdateCause,
   CellUpdateCause-ext,
   CipheringAlgorithm,
   CipheringAlgorithm-r7,
   CipheringModeInfo,
   CipheringModeInfo-r7,
   DelayRestrictionFlag,
   DL-PhysChCapabilityFDD-v380ext,
   DSCH-RNTI,
   E-RNTI,
   EstablishmentCause,
   FailureCauseWithProtErr,
   FailureCauseWithProtErrTrId,
   GroupReleaseInformation,
   H-RNTI,
   High-MobilityDetected,
   InitialUE-Identity,
   IntegrityProtActivationInfo,
   IntegrityProtectionModeInfo,
   IntegrityProtectionModeInfo-r7,
   N-308,
   PagingCause,
   PagingRecordList,
   PagingRecord2List-r5,
   PDCP-Capability-v770ext,
   Pre-RedirectionInfo,
   ProtocolErrorIndicator,
   ProtocolErrorIndicatorWithMoreInfo,
   RadioFrequencyBandTDDList,
   Rb-timer-indicator,
   RedirectionInfo,
   RedirectionInfo-r6,
   RejectionCause,
   ReleaseCause,
   RF-CapabilityComp,
   RRC-StateIndicator,
   RRC-TransactionIdentifier,
   SecurityCapability,
   START-Value
   STARTList,
   SystemSpecificCapUpdateReq-v590ext,
   U-RNTI,
   U-RNTI-Short,
   UESpecificBehaviourInformation1idle,
   UESpecificBehaviourInformation1interRAT,
   UE-CapabilityContainer-IEs,
   UE-ConnTimersAndConstants,
   UE-ConnTimersAndConstants-v3a0ext,
   UE-ConnTimersAndConstants-r5,
   UE-HSPA-Identities-r6,
   UE-RadioAccessCapabBandFDDList2,
   UE-RadioAccessCapabBandFDDList-ext,
   UE-RadioAccessCapability,
   UE-RadioAccessCapability-v370ext,
   UE-RadioAccessCapability-v380ext,
```

```
UE-RadioAccessCapability-v3a0ext,
   UE-RadioAccessCapability-v3q0ext,
   UE-RadioAccessCapability-v4b0ext,
   UE-RadioAccessCapability-v590ext,
   UE-RadioAccessCapability-v5c0ext,
   UE-RadioAccessCapability-v650ext,
   UE-RadioAccessCapability-v680ext,
   UE-RadioAccessCapability-v7e0ext,
   UE-RadioAccessCapability-v7f0ext,
   UE-RadioAccessCapabilityComp,
   UE-RadioAccessCapabilityComp-ext,
   UE-RadioAccessCapabilityComp-v770ext,
   UE-RadioAccessCapabilityComp2,
   UE-RadioAccessCapabilityComp2-v770ext,
   UE-RadioAccessCapabilityComp2-v7f0ext,
   UE-RadioAccessCapabilityInfo-v770ext,
   UE-SecurityInformation,
   UE-SecurityInformation2
   UE-SpecificCapabilityInformation-LCRTDD,
   URA-UpdateCause,
   UTRAN-DRX-CycleLengthCoefficient,
   UTRAN-DRX-CycleLengthCoefficient-r7,
   WaitTime,
-- Radio Bearer IEs :
   DefaultConfigIdentity,
   DefaultConfigIdentity-r4,
   DefaultConfigIdentity-r5,
   DefaultConfigIdentity-r6,
   DefaultConfigMode,
   DL-CounterSynchronisationInfo,
   DL-CounterSynchronisationInfo-r5,
   PDCP-ROHC-TargetMode,
   PredefinedConfigIdentity,
   PredefinedConfigStatusList,
   PredefinedConfigStatusListComp,
   PredefinedConfigSetWithDifferentValueTag,
   RAB-Info,
   RAB-Info-r6,
   RAB-Info-r7,
   RAB-Info-Post,
   RAB-InformationList,
   RAB-InformationList-r6,
   RAB-InformationReconfigList,
   RAB-InformationMBMSPtpList,
   RAB-InformationSetupList,
   RAB-InformationSetupList-r4,
   RAB-InformationSetupList-r5,
   RAB-InformationSetupList-r6-ext,
   RAB-InformationSetupList-r6,
   RAB-InformationSetupList-v6b0ext,
   RAB-InformationSetupList-r7,
   RAB-InformationSetupList-v820ext,
   RB-ActivationTimeInfoList.
   RB-COUNT-C-InformationList
   RB-COUNT-C-MSB-InformationList,
   RB-IdentityList,
   RB-InformationAffectedList,
   RB-InformationAffectedList-r5,
   RB-InformationAffectedList-r6,
   RB-InformationAffectedList-r7,
   RB-InformationChangedList-r6,
   RB-InformationReconfigList,
   RB-InformationReconfigList-r4,
   RB-InformationReconfigList-r5,
   RB-InformationReconfigList-r6,
   RB-InformationReconfigList-r7,
   RB-InformationReleaseList
   RB-PDCPContextRelocationList,
   SRB-InformationSetupList,
   SRB-InformationSetupList-r5,
   SRB-InformationSetupList-r6,
   SRB-InformationSetupList-r7,
   SRB-InformationSetupList2,
   SRB-InformationSetupList2-r6,
   SRB-InformationSetupList2-r7,
   UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
   CPCH-SetID,
```

```
DL-AddReconfTransChInfo2List,
   DL-AddReconfTransChInfoList,
   DL-AddReconfTransChInfoList-r4,
   DL-AddReconfTransChInfoList-r5.
   DL-AddReconfTransChInfoList-r7,
   DL-CommonTransChInfo,
   DL-CommonTransChInfo-r4,
   DL-DeletedTransChInfoList,
   DL-DeletedTransChInfoList-r5,
   DL-DeletedTransChInfoList-r7,
   DRAC-StaticInformationList,
   PowerOffsetInfoShort,
   TFC-Subset
   TFCS-Identity,
   UL-AddReconfTransChInfoList,
   UL-AddReconfTransChInfoList-r6,
   UL-AddReconfTransChInfoList-r7,
   UL-CommonTransChInfo,
   UL-CommonTransChInfo-r4,
   UL-DeletedTransChInfoList,
   UL-DeletedTransChInfoList-r6,
-- Physical Channel IEs :
   Alpha,
   BEACON-PL-Est,
   CCTrCH-PowerControlInfo.
   CCTrCH-PowerControlInfo-r4,
   CCTrCH-PowerControlInfo-r5,
   CCTrCH-PowerControlInfo-r7,
   ConstantValue,
   ConstantValueTdd,
   CPCH-SetInfo.
   DHS-Sync,
   DL-CommonInformation,
   DL-CommonInformation-r4,
   DL-CommonInformation-r5,
   DL-CommonInformation-r6,
   DL-CommonInformation-r7,
   DL-CommonInformationPost,
   DL-HSPDSCH-Information.
   DL-HSPDSCH-Information-r6,
   DL-HSPDSCH-Information-r7,
   DL-HSPDSCH-MultiCarrier-Information,
   DL-InformationPerRL-List,
   DL-InformationPerRL-List-r4,
   DL-InformationPerRL-List-r5,
   DL-InformationPerRL-List-r5bis,
   DL-InformationPerRL-List-r6.
   DL-InformationPerRL-List-r7
   DL-InformationPerRL-List-v6b0ext,
   DL-InformationPerRL-ListPostFDD,
   DL-InformationPerRL-PostTDD,
   DL-InformationPerRL-PostTDD-LCR-r4,
   DL-MultiCarrier-Information,
   DL-PDSCH-Information,
   DL-TPC-PowerOffsetPerRL-List,
   DPC-Mode,
   DPCH-CompressedModeStatusInfo,
   HS-DSCH-TBSizeTable,
   DTX-DRX-TimingInfo-r7,
   DTX-DRX-Info-r7,
   DynamicPersistenceLevel,
   E-DCH-ReconfigurationInfo,
   E-DCH-ReconfigurationInfo-r7,
   E-DCH-RL-InfoSameServingCell,
   E-TFC-Boost-Info-r7,
   E-DPDCH-PowerInterpolation,
   EXT-UL-TimingAdvance,
   Feedback-cycle-r7,
   FrequencyInfo,
   FrequencyInfoFDD,
   FrequencyInfoTDD,
   HARQ-Info-r7,
   HARO-Preamble-Mode,
   HS-SCCH-LessInfo-r7.
   HS-SICH-Power-Control-Info-TDD384,
   HS-SICH-Power-Control-Info-TDD768,
   MaxAllowedUL-TX-Power,
   MIMO-Parameters-r7,
```

```
MIMO-Parameters-v7f0ext,
   MIMO-Parameters-v7g0ext,
   OpenLoopPowerControl-IPDL-TDD-r4,
   PDSCH-CapacityAllocationInfo,
   PDSCH-CapacityAllocationInfo-r4
   PDSCH-CapacityAllocationInfo-r7,
   PDSCH-Identity,
   Multi-frequencyInfo-LCR-r7,
   PrimaryCPICH-Info,
   PrimaryCCPCH-TX-Power,
   PUSCH-CapacityAllocationInfo,
   PUSCH-CapacityAllocationInfo-r4,
   PUSCH-CapacityAllocationInfo-r7,
   PUSCH-Identity,
   PUSCH-SysInfoList-HCR-r5,
   PDSCH-SysInfoList-HCR-r5,
   RL-AdditionInformationList,
   RL-AdditionInformationList-r6,
   RL-AdditionInformation-list-v6b0ext,
   RL-AdditionInformationList-r7,
   RL-RemovalInformationList,
   Serving-HSDSCH-CellInformation,
   Serving-HSDSCH-CellInformation-r7,
   SpecialBurstScheduling,
   SSDT-Information,
   SSDT-Information-r4,
   TFC-ControlDuration,
   SSDT-UL,
   TimingMaintainedSynchInd,
   TimeslotList.
   TimeslotList-r4,
   TX-DiversityMode,
   UL-16QAM-Config,
   UL-ChannelRequirement,
   UL-ChannelRequirement-r4,
   UL-ChannelRequirement-r5,
   UL-ChannelRequirementWithCPCH-SetID,
   UL-ChannelRequirementWithCPCH-SetID-r4,
   UL-ChannelRequirementWithCPCH-SetID-r5,
   UL-DPCH-Info,
   UL-DPCH-Info-r4,
   UL-DPCH-Info-r5,
   UL-DPCH-Info-r6,
   UL-DPCH-Info-r7,
   UL-DPCH-InfoPostFDD,
   UL-DPCH-InfoPostTDD,
   UL-DPCH-InfoPostTDD-LCR-r4,
   UL-EDCH-Information-ext,
   UL-EDCH-Information-r6,
   UL-EDCH-Information-r7,
   UL-SynchronisationParameters-r4,
   UL-TimingAdvance,
   UL-TimingAdvanceControl,
   UL-TimingAdvanceControl-r4,
   UL-TimingAdvanceControl-r7,
   UpPCHposition-LCR,
-- Measurement IEs :
   AdditionalMeasurementID-List,
   DeltaRSCP,
   Frequency-Band,
   EventResults,
   EventResults-v770ext,
   Inter-FreqEventCriteriaList-v590ext,
   Intra-FreqEventCriteriaList-v590ext,
   IntraFreqReportingCriteria-1b-r5,
   IntraFreqEvent-1d-r5,
   IntraFreqCellID,
   InterFreqEventResults-LCR-r4-ext,
   InterRATCellInfoIndication,
   InterRAT-TargetCellDescription,
   MeasuredResults,
   MeasuredResults-v390ext,
   MeasuredResults-v590ext,
   MeasuredResults-v770ext,
   MeasuredResultsList,
   MeasuredResultsList-LCR-r4-ext,
   MeasuredResultsList-v770xet,
   MeasuredResultsOnRACH,
   MeasuredResultsOnRACH-v7q0ext,
```

```
MeasuredResultsOnRACHinterFreq,
   MeasurementCommand,
   MeasurementCommand-r4,
   MeasurementCommand-r6,
   MeasurementCommand-r7,
   MeasurementIdentity,
   MeasurementReportingMode,
   NewInterFreqCellList-v7b0ext,
   PrimaryCCPCH-RSCP,
   SFN-Offset-Validity
   TimeslotListWithISCP,
   TrafficVolumeMeasuredResultsList,
   UE-Positioning-GPS-AssistanceData,
   UE-Positioning-GPS-AssistanceData-v770ext,
   UE-Positioning-GPS-ReferenceTimeUncertainty,
   UE-Positioning-Measurement-v390ext,
   UE-Positioning-OTDOA-AssistanceData,
   UE-Positioning-OTDOA-AssistanceData-r4ext,
   UE-Positioning-OTDOA-AssistanceData-UEB,
   UE-Positioning-OTDOA-AssistanceData-UEB-ext,
   UE-Positioning-OTDOA-MeasuredResultsTDD-ext,
   UE-Positioning-GANSS-AssistanceData,
-- Other IEs :
   BCCH-ModificationInfo,
   CDMA2000-MessageList,
   GSM-TargetCellInfoList,
   GERANIu-MessageList,
   GERAN-SystemInformation,
   GSM-MessageList,
   InterRAT-ChangeFailureCause,
   InterRAT-HO-FailureCause,
   InterRAT-UE-RadioAccessCapabilityList,
   InterRAT-UE-RadioAccessCapability-v590ext,
   InterRAT-UE-SecurityCapList,
   IntraDomainNasNodeSelector,
   MIB-ValueTag,
   ProtocolErrorMoreInformation,
   Rplmn-Information,
   Rplmn-Information-r4.
   SegCount,
   SegmentIndex,
   SFN-Prime,
   SIB-Data-fixed,
   SIB-Data-variable,
   SIB-Type,
-- MBMS IEs:
   MBMS-CellGroupIdentity-r6,
   MBMS-CommonRBInformationList-r6,
   MBMS-CurrentCell-SCCPCHList-r6,
   MBMS-JoinedInformation-r6,
   MBMS-MICHConfigurationInfo-r6,
   MBMS-MICHConfigurationInfo-v770ext,
   MBMS-ModifedServiceList-r6,
   MBMS-ModifiedServiceList-LCR-v7c0ext,
   MBMS-ModifiedServiceList-v770ext,
   MBMS-MSCH-ConfigurationInfo-r6,
   MBMS-NeighbouringCellSCCPCHList-r6,
   MBMS-NeighbouringCellSCCPCHList-v770ext,
   MBMS-NumberOfNeighbourCells-r6,
   MBMS-PhyChInformationList-r6,
   MBMS-PhyChInformationList-r7,
   MBMS-PL-ServiceRestrictInfo-r6,
   MBMS-PreferredFrequencyList-r6,
   MBMS-PTMActivationTime-r6,
   MBMS-SelectedServiceInfo.
   MBMS-SelectedServicesShort,
   MBMS-ServiceAccessInfoList-r6,
   MBMS-ServiceIdentity-r6,
   MBMS-ServiceSchedulingInfoList-r6,
   MBMS-SIBType5-SCCPCHList-r6,
   MBMS-TimersAndCounters-r6,
   MBMS-TranspChInfoForEachCCTrCh-r6,
   MBMS-TranspChInfoForEachTrCh-r6,
   MBMS-UnmodifiedServiceList-r6,
   MBMS-UnmodifiedServiceList-v770ext,
   MBSFN-ClusterFrequency-r7,
   MBSFN-InterFrequencyNeighbourList-r7,
   MBSFN-TDM-Info-List,
   MBSFN-TDDInformation-LCR
```

```
FROM InformationElements
    maxSIBperMsg,
    maxURNTI-Group
FROM Constant-definitions;
__ ***************
-- ACTIVE SET UPDATE (FDD only)
__ ****************
ActiveSetUpdate ::= CHOICE {
                                        SEQUENCE {
         activeSetUpdate-r3 ActiveSetUpdate-r3-IEs, laterNonCriticalExtensions SEQUENCE {
              -- Container for additional R99 extensions
             activeSetUpdate-r3-add-ext BIT STRING OPTIONAL,
v4b0NonCriticalExtensions SEQUENCE {
   activeSetUpdate-v4b0ext ActiveSetUpdate-v4b0ext-IEs,
   v590NonCriticalExtensions SEQUENCE {
   activeSetUpdate-v590ext ActiveSetUpdate-v590ext-IEs,
   v690NonCriticalExtensions SEQUENCE {
                           OPTIONAL
                       OPTIONAL
             } OPTIONAL
         } OPTIONAL
    later-than-r3
                                         SEQUENCE {
                                        RRC-TransactionIdentifier,
        rrc-TransactionIdentifier
         criticalExtensions
                                             CHOICE {
                                          SEQUENCE {
             r6
                  activeSetUpdate-r6 ActiveSetUpdate-r6-IEs, activeSetUpdate-r6-add-ext v6b0NonCriticalExtensions SEQUENCE {
                                                       BIT STRING OPTIONAL,
                                                     ActiveSetUpdate-v6b0ext-IEs, SEQUENCE {} OPTIONAL
                      activeSetUpdate-v6b0ext
                      nonCriticalExtensions
                     OPTIONAL
                                                 CHOICE {
             criticalExtensions
                       SEQUENCE {
activeSetUpdate-r7
activeSetUpdate-r7
                       activeSetUpdate-r7 ActiveSetUpdate-r7-IEs,
activeSetUpdate-r7-add-ext BIT STRING OPTIONAL,
v780NonCriticalExtensions SEQUENCE {
   activeSetUpdate-v780ext ActiveSetUpdate-v780ext-IEs,
                           v7f0NonCriticalExtensions SEQUENCE {
                                activeSetUdpate-v7f0ext ActiveSetUpdate-v7f0ext-IEs, v7g0NonCriticalExtensions SEQUENCE {
                                    activeSetUdpate-v7g0ext ActiveSetUpdate-v7g0ext-IEs,
                                                                         SEQUENCE { } OPTIONAL
                                    nonCriticalExtensions
                                    OPTIONAL
                                OPTIONAL
                           OPTIONAL
                  criticalExtensions
                                                     SEQUENCE {}
             }
         }
    }
}
ActiveSetUpdate-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
         rrc-TransactionIdentifier
                                         RRC-TransactionIdentifier,
         -- dummy and dummy2 are not used in this version of the specification, they should
         -- not be sent and if received they should be ignored.
                                        IntegrityProtectionModeInfo
                                                                                   OPTIONAL,
         dummy
                                         CipheringModeInfo
                                                                                  OPTIONAL,
         dummy2
         activationTime
                                             ActivationTime
                                                                                       OPTIONAL.
         newU-RNTI
                                             U-RNTI
                                                                                       OPTIONAL,
    -- Core network IEs
         cn-InformationInfo
                                             CN-InformationInfo
                                                                                       OPTIONAL,
    -- Radio bearer IEs
         -- dummy3 is not used in this version of the specification, it should
         -- not be sent and if received it should be ignored.
         dummv3
                                   DL-CounterSynchronisationInfo
                                                                               OPTIONAL,
    -- Physical channel IEs
```

```
maxAllowedUL-TX-PowerMaxAllowedUL-TX-Powerrl-AdditionInformationListRL-AdditionInformationListrl-RemovalInformationListRL-RemovalInformationListtx-DiversityModeTX-DiversityMode
                                                                                          OPTIONAL,
                                                                                          OPTIONAL,
                                                                                          OPTIONAL,
                                                                                          OPTIONAL,
          -- dummy4 is not used in this version of the specification, it should
          -- not be sent and if received it should be ignored.
                                               SSDT-Information
                                                                                          OPTIONAL
         dummv4
}
ActiveSetUpdate-v4b0ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
         -- dummy is not used in this version of the specification, it should -- not be sent and if received it should be ignored.
                                                    SSDT-UL
                                                                                              OPTIONAL,
         -- The order of the RLs in IE cell-id-PerRL-List is the same as
         -- The order of the KLS IN IN CELL-IN-LEGAL LIST -- in IE RL-AdditionInformationList included in this message
         cell-id-PerRL-List
                                                    CellIdentity-PerRL-List
                                                                                             OPTIONAL
}
ActiveSetUpdate-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
         dpc-Mode
                                                    DPC-Mode,
         dl-TPC-PowerOffsetPerRL-List
                                                    DL-TPC-PowerOffsetPerRL-List OPTIONAL
}
ActiveSetUpdate-v690ext-IEs ::= SEQUENCE {
    -- Core network IEs
                                              PLMN-Identity
                                                                                              OPTIONAL
         primary-plmn-Identity
}
ActiveSetUpdate-r6-IEs ::= SEQUENCE {
    -- User equipment IEs
         activationTime
                                                    ActivationTime
                                                                                               OPTIONAL,
         newU-RNTI
                                                    U-RNTI
                                                                                               OPTIONAL,
                                                   H-RNTI
                                                                                               OPTIONAL,
         newH-RNTI
         newPrimary-E-RNTI
                                                    E-RNTI
                                                                                               OPTIONAL,
         newSecondary-E-RNTI
                                                   E-RNTI
                                                                                               OPTIONAL,
     -- Core network IEs
         cn-InformationInfo
                                                  CN-InformationInfo-r6
                                                                                               OPTIONAL,
    -- Physical channel IEs
         maxAllowedUL-TX-Power
         maxAllowedUL-TX-Power
rl-AdditionInformationList
rl-RemovalInformationList
tx-DiversityMode

maxAllowedUL-TX-Power
RL-AdditionInformationList-r6
RL-RemovalInformationList
TY-DiversityMode
                                                                                               OPTIONAL,
                                                                                               OPTIONAL.
                                                                                               OPTIONAL,
         tx-DiversityMode
                                                    TX-DiversityMode
                                                                                               OPTIONAL,
         dpc-Mode DPC-Mode OPTIONAL, serving-HSDSCH-CellInformation e-dch-ReconfigurationInfo E-DCH-ReconfigurationInfo OPTIONAL
                                                                                              OPTIONAL,
                                                                                               OPTIONAL,
}
ActiveSetUpdate-v6b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
         rl-AdditionInformation-list-v6b0ext RL-AdditionInformation-list-v6b0ext OPTIONAL
}
ActiveSetUpdate-r7-IEs ::= SEQUENCE {
     -- User equipment IEs
         activationTime
                                                    ActivationTime
                                                                                               OPTIONAL,
         newU-RNTI
                                                    U-RNTI
                                                                                               OPTIONAL,
         newH-RNTI
                                                    H-RNTT
                                                                                               OPTIONAL.
         newPrimary-E-RNTI
                                                    E-RNTT
                                                                                               OPTTONAL.
         newSecondary-E-RNTI
                                                    E-RNTI
                                                                                               OPTIONAL,
     -- Core network IEs
                                                  CN-InformationInfo-r6
         cn-InformationInfo
                                                                                               OPTIONAL,
     -- Physical channel IEs
                                                 DTX-DRX-TimingInfo-r7
         dtx-drx-TimingInfo
                                                                                               OPTIONAL.
         dtx-drx-Info
                                                   DTX-DRX-Info-r7
                                                                                               OPTIONAL,
         hs-scch-LessInfo
                                                    HS-SCCH-LessInfo-r7
                                                                                               OPTIONAL,
         mimoParameters
                                                   MIMO-Parameters-r7
                                                                                               OPTIONAL,
         maxAllowedUL-TX-Power
                                                    MaxAllowedUL-TX-Power
                                                                                               OPTIONAL,
         maxAllowedUL-IX-Power
rl-AdditionInformationList
RL-AdditionInformationList
rl-RemovalInformationList
RL-RemovalInformationList
tx-DiversityMode
TX-DiversityMode
                                                                                               OPTIONAL,
                                                                                              OPTIONAL,
         tx-DiversityMode
                                                    TX-DiversityMode
                                                                                               OPTIONAL,
         DPC-Mode OPTIONAL, serving-HSDSCH-CellInformation Serving-HSDSCH-CellInformation-r7 OPTIONAL, e-dch-ReconfigurationInfo E-DCH-ReconfigurationInfo-r7 OPTIONAL, ul-16QAM-Config UL-16QAM-Config
                                                   Serving-HSDSCH-Cerringer.....

E-DCH-ReconfigurationInfo-r7 OPTIONAL,
OPTIONAL,
                                                    UL-16QAM-Conrig
E-DCH-RL-InfoSameServingCell
         e-dch-ReconfInfoSameCell
                                                                                               OPTIONAL,
         e-TFC-Boost-Info
                                                    E-TFC-Boost-Info-r7
                                                                                               OPTIONAL,
```

```
e-DPDCH-PowerInterpolation E-DPDCH-PowerInterpolation
                                                                           OPTIONAL
}
ActiveSetUpdate-v780ext-IEs ::= SEQUENCE {
   -- Physical channel IEs
      hs-DSCH-TBSizeTable
                                        HS-DSCH-TBSizeTable
                                                                            OPTIONAL
}
ActiveSetUpdate-v7f0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
   mimoParameters
                                        MIMO-Parameters-v7f0ext
                                                                            OPTIONAL
ActiveSetUpdate-v7g0ext-IEs ::= SEQUENCE {
   -- Physical channel IEs
   mimoParameters
                                         MIMO-Parameters-v7q0ext
                                                                            OPTIONAL
}
__ ***************
-- ACTIVE SET UPDATE COMPLETE (FDD only)
__ ****************
ActiveSetUpdateComplete ::= SEQUENCE {
    -- User equipment IEs
       rrc-TransactionIdentifier
                                   RRC-TransactionIdentifier,
       -- dummy is not used in this version of the specification, it should
       -- not be sent and if received it should be ignored.
                                 IntegrityProtActivationInfo
       dummy
                                                                   OPTIONAL,
   -- Radio bearer IEs
       -- dummy2 and dummy3 are not used in this version of the specification, they should
        -- not be sent and if received they should be ignored.
dummy2 RB-ActivationTimeInfoList
       dummy2
                                                                    OPTIONAL.

    dummy2
    RB-ActivationTimeIntoList

    dummy3
    UL-CounterSynchronisationInfo

    laterNonCriticalExtensions
    SEQUENCE {

                                                                   OPTIONAL,
          -- Container for additional R99 extensions
           activeSetUpdateComplete-r3-add-ext BIT STRING OPTIONAL,
                                   SEQUENCE {} OPTIONAL
           nonCriticalExtensions
       } OPTIONAL
}
__ ***************
-- ACTIVE SET UPDATE FAILURE (FDD only)
__ **************************
ActiveSetUpdateFailure ::= SEQUENCE {
   -- User equipment IEs
       rrc-TransactionIdentifier RRC-TransactionIdentifier, failureCause FailureCauseWithProtErr, SEQUENCE {
            -- Container for additional R99 extensions
           activeSetUpdateFailure-r3-add-ext BIT STRING
                                                               OPTIONAL,
                                   SEQUENCE {} OPTIONAL
           nonCriticalExtensions
      OPTIONAL
}
__ ****************
-- ASSISTANCE DATA DELIVERY--
__ ***************
AssistanceDataDelivery ::= CHOICE {
       SEQUENCE {
assistanceDataDelivery-r3
v3a0NonCriticalExtensions
SEQUENCE {
SEQUENCE {
           assistanceDataDelivery-v3a0ext AssistanceDataDelivery-v3a0ext, laterNonCriticalExtensions SEQUENCE {
               -- Container for additional R99 extensions
               assistanceDataDelivery-r3-add-ext BIT STRING OPTIONAL,
               v4b0NonCriticalExtensions SEQUENCE {
                   assistanceDataDelivery-v4b0ext AssistanceDataDelivery-v4b0ext-IEs, v770NonCriticalExtension SEQUENCE {
                       {\tt assistanceDataDelivery-v770ext-IEs,}
                       nonCriticalExtensions
                                                    SEQUENCE {} OPTIONAL
                   } OPTIONAL
```

```
} OPTIONAL
               OPTIONAL
          OPTIONAL
   later-than-r3
                                 SEQUENCE {
                                RRC-TransactionIdentifier,
      rrc-TransactionIdentifier
       criticalExtensions
                                     SEQUENCE {}
}
AssistanceDataDelivery-r3-IEs ::= SEQUENCE {
   -- User equipment IEs
   rrc-TransactionIdentifier
                                RRC-TransactionIdentifier.
    -- Measurement Information Elements
   ue-positioning-GPS-AssistanceData
                                            UE-Positioning-GPS-AssistanceData
   OPTIONAL,
   ue-positioning-OTDOA-AssistanceData-UEB UE-Positioning-OTDOA-AssistanceData-UEB
   OPTIONAL
}
AssistanceDataDelivery-v3a0ext ::= SEQUENCE \{
   sfn-Offset-Validity
                                    SFN-Offset-Validity OPTIONAL
AssistanceDataDelivery-v4b0ext-IEs ::= SEQUENCE {
   ue-Positioning-OTDOA-AssistanceData-r4ext UE-Positioning-OTDOA-AssistanceData-r4ext OPTIONAL
AssistanceDataDelivery-v770ext-IEs ::= SEQUENCE {
   ue-Positioning-OTDOA-AssistanceData-UEB-ext
                                     UE-Positioning-OTDOA-AssistanceData-UEB-ext
                                                                                  OPTIONAL.
   ue-Positioning-GPS-AssistanceData UE-Positioning-GPS-AssistanceData-v770ext
   ue-positioning-GANSS-AssistanceData UE-Positioning-GANSS-AssistanceData
                                                                                  OPTIONAL
}
 __ ***************
-- CELL CHANGE ORDER FROM UTRAN
__ ***************
CellChangeOrderFromUTRAN ::= CHOICE {
                                 SEQUENCE {
       cellChangeOrderFromUTRAN-IES CellChalaterNonCriticalExtensions SEQUENCE {
                                      CellChangeOrderFromUTRAN-r3-IEs,
           -- Container for additional R99 extensions
           cellChangeOrderFromUTRAN-r3-add-ext BIT STRING
                                                              OPTIONAL.
           v590NonCriticalExtensions SEQUENCE {
               cellChangeOrderFromUTRAN-v590ext CellChangeOrderFromUTRAN-v590ext-IEs,
                                           SEQUENCE {} OPTIONAL
               nonCriticalExtensions
              OPTIONAL
       ) OPTIONAL
                                 SEQUENCE {
   later-than-r3
                                RRC-TransactionIdentifier,
      rrc-TransactionIdentifier
                                     SEQUENCE {}
       criticalExtensions
}
CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
       rrc-TransactionIdentifier
                                     RRC-TransactionIdentifier,
       -- dummy is not used in this version of the specification, it should
       -- not be sent and if received it should be ignored.
                                                                       OPTIONAL.
       dummy
                                     IntegrityProtectionModeInfo
                                                                       OPTIONAL,
       activationTime
                                     ActivationTime
       -- the IE rab-InformationList is not used in this version of the specification, it should
       -- not be sent and if received it should be ignored. The IE may be used in a later
       -- version of the protocol and hence it is not changed into a \ensuremath{\overline{\text{d}}} dummy
                                                                       OPTIONAL.
       rab-InformationList
                             RAB-InformationList
       }
CellChangeOrderFromUTRAN-v590ext-IEs ::= SEQUENCE {
       geran-SystemInfoType
                                         CHOICE
                                             GERAN-SystemInformation,
          sI
           pSI
                                             GERAN-SystemInformation
              OPTIONAL
```

```
}
__ ******************
-- CELL CHANGE ORDER FROM UTRAN FAILURE
__ ***************
CellChangeOrderFromUTRANFailure ::= CHOICE {
                                       SEQUENCE {
         cellChangeOrderFromUTRANFailure-r3
                                           CellChangeOrderFromUTRANFailure-r3-IEs,
                                          SEQUENCE {
         laterNonCriticalExtensions
             -- Container for additional R99 extensions
             cellChangeOrderFromUTRANFailure-r3-add-ext
                                                                BIT STRING OPTIONAL,
             nonCriticalExtensions
                                              SEQUENCE {} OPTIONAL
         } OPTIONAL
    -- dummy is not used in this version of the specification and it
    -- should be ignored.
                                      SEQUENCE {
    dummy
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions
                                           SEQUENCE {}
}
CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier
                                         RRC-TransactionIdentifier,
         -- dummy is not used in this version of the specification, it should
         -- not be sent and if received it should be ignored.
                                         IntegrityProtectionModeInfo
        interRAT-ChangeFailureCause
                                           InterRAT-ChangeFailureCause
}
  *************
-- CELL UPDATE
__ ********************
CellUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI
                                          U-RNTI,
         startList STARTList,
        startList STARTList,
am-RLC-ErrorIndicationRb2-3or4 BOOLEAN,
am-RLC-ErrorIndicationRb5orAbove BOOLEAN,
cellUpdateCause CellUpdateCause,
         -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
                                         FailureCauseWithProtErrTrId OPTIONAL,
         failureCause
        rb-timer-indicator
                                           Rb-timer-indicator,
    -- Measurement IEs
        measuredResultsOnRACH MeasuredResultsOnRACH laterNonCriticalExtensions SEQUENCE {
                                                                                  OPTIONAL,
             -- Container for additional R99 extensions
             cellUpdate-r3-add-ext BIT STRING
                                  (CONTAINING CellUpdate-r3-add-ext-IEs)
                                                                                  OPTIONAL,
             v590NonCriticalExtensions SEQUENCE {
                 cellUpdate-v590ext CellUpdate-v590ext,
                 v690NonCriticalExtensions SEQUENCE {
    cellUpdate-v690ext CellUpd
                      cellUpdate-v690ext CellUpdate-v690ext-IEs,
v6b0NonCriticalExtensions SEQUENCE {
    cellUpdate-v6b0ext CellUpdate-v6b0ext-IEs,
    v770NonCriticalExtensions SEQUENCE {
        cellUpdate-v770ext CellUpdate-v770ext-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
                                  OPTIONAL
                             OPTIONAL
                          OPTIONAL
                      OPTIONAL
             OPTIONAL
                                     SEQUENCE {
CellUpdate-r3-add-ext-IEs ::=
    cellUpdate-v7e0ext
    cellUpdate-v7e0ext CellUpd
v7g0NonCriticalExtensions SEQUENCE {
    cellUpdate-v7g0ext CellUpd
    nonCriticalExtensions SEQUENC
    cellUpdate-v7e0ext
                                       CellUpdate-v7e0ext-IEs,
                                      CellUpdate-v7g0ext-IEs,
                                           SEQUENCE {} OPTIONAL
```

```
OPTIONAL
}
CellUpdate-v690ext-IEs ::= SEQUENCE {
   -- User equipment IEs
      cellUpdateCause-ext
                                                            OPTIONAL,
                                                           OPTIONAL,
   -- Measurement IEs
      {\tt measuredResultsOnRACHinterFreq} \quad {\tt MeasuredResultsOnRACHinterFreq} \quad \quad {\tt OPTIONAL},
      reconfigurationStatusIndicator ENUMERATED { true }
                                                            OPTIONAL
}
CellUpdate-v6b0ext-IEs ::= SEQUENCE {
   -- MBMS IEs
     mbmsSelectedServices
                            MBMS-SelectedServicesShort OPTIONAL
}
CellUpdate-v770ext-IEs ::= SEQUENCE {
-- User equipment IEs
      }
CellUpdate-v7e0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
     supportForTwoDRXSchemesInPCH ENUMERATED { true }
}
CellUpdate-v7g0ext-IEs ::= SEQUENCE {
  -- Measurement IEs
                                 MeasuredResultsOnRACH-v7g0ext
     measuredResultsOnRACH-v7q0ext
                                                              OPTIONAL
}
__ ****************
-- CELL UPDATE CONFIRM
__ ***************
CellUpdateConfirm ::= CHOICE {
      r3
            -- Container for additional R99 extensions
            OPTIONAL
                         OPTIONAL
                      OPTIONAL
                   OPTIONAL
         }
               OPTIONAL
            OPTIONAL
                     SEQUENCE {
      rrc-TransactionIdentifier RRC-TransactionIdentifier, criticalExtensions CHOICE {

**P4** SEQUENCE {
            SEQUENCE {
cellUpdateConfirm-r4
v4d0NonCritical
            cellUpdateConfirm-r4
v4d0NonCriticalExtensions
CellUpdateConfirm-r4-IEs,
vEQUENCE {
                -- Container for adding non critical extensions after freezing REL-5
                cellUpdateConfirm-r4-add-ext BIT STRING OPTIONAL, v590NonCriticalExtenstions SEQUENCE {
```

```
cellUpdateConfirm-v590ext
                                                      CellUpdateConfirm-v590ext-IEs,
                       v5d0NonCriticalExtenstions
                                                      SEQUENCE {
                           cellUpdateConfirm-v5d0ext
                                                          CellUpdateConfirm-v5d0ext-IEs,
                                                          SEQUENCE {
                           v690NonCriticalExtensions
                               cellUpdateConfirm-v690ext
                                                              CellUpdateConfirm-v690ext-IEs,
                               nonCriticalExtensions
                                                              SEQUENCE { }
                                                                            OPTIONAL
                               OPTIONAL
                           OPTIONAL
                       OPTIONAL
               }
                   OPTIONAL
           },
                                           CHOICE {
           criticalExtensions
                                               SEQUENCE {
                                                  CellUpdateConfirm-r5-IEs,
                   cellUpdateConfirm-r5
                   -- Container for adding non critical extensions after freezing REL-6
                   cellUpdateConfirm-r5-add-ext BIT STRING
                                                                 OPTIONAL,
                   v5d0NonCriticalExtenstions
                                                  SEQUENCE {
                       cellUpdateConfirm-v5d0ext
                                                      CellUpdateConfirm-v5d0ext-IEs,
                                                      SEQUENCE {
                       v690NonCriticalExtensions
                           cellUpdateConfirm-v690ext
                                                          CellUpdateConfirm-v690ext-IEs,
                           nonCriticalExtensions
                                                          SEQUENCE {}
                                                                         OPTIONAL
                           OPTIONAL
                       OPTIONAL
               criticalExtensions
                                               CHOICE {
                                                  SEQUENCE {
                       cellUpdateConfirm-r6
                                                      CellUpdateConfirm-r6-IEs,
                       -- Container for adding non critical extensions after freezing REL-7
                       cellUpdateConfirm-r6-add-ext BIT STRING
                                                                      OPTIONAL,
                       v6b0NonCriticalExtensions
                                                      SEQUENCE {
                                                          CellUpdateConfirm-v6b0ext-IEs,
                           cellUpdateConfirm-v6b0ext
                                                          SEQUENCE {}
                           nonCriticalExtensions
                                                                         OPTIONAL
                           OPTIONAL
                   },
                   criticalExtensions
                                                   CHOICE {
                                                      SEQUENCE {
                       r7
                           cellUpdateConfirm-r7
                                                          CellUpdateConfirm-r7-IEs,
                            -- Container for adding non critical extensions after freezing REL-8
                           cellUpdateConfirm-r7-add-ext BIT STRING
                                       (CONTAINING CellUpdateConfirm-r7-add-ext-IEs) OPTIONAL,
                           v780NonCriticalExtensions
                                                          SEQUENCE {
                               cellUpdateConfirm-v780ext
                                                              CellUpdateConfirm-v780ext-IEs,
                               nonCriticalExtensions
                                                              SEQUENCE {}
                                                                            OPTIONAL
                               OPTIONAL
                       criticalExtensions
                                                     SEQUENCE {}
                   }
              }
          }
       }
   }
}
CellUpdateConfirm-r3-IEs ::= SEQUENCE {
     - User equipment IEs
       rrc-TransactionIdentifier
                                      RRC-TransactionIdentifier,
       integrityProtectionModeInfo
                                       IntegrityProtectionModeInfo
                                                                          OPTIONAL,
       cipheringModeInfo
                                       CipheringModeInfo
                                                                          OPTIONAL,
       activationTime
                                       ActivationTime
                                                                          OPTIONAL,
       new-U-RNTI
                                       U-RNTI
                                                                          OPTIONAL.
       new-C-RNTI
                                       C-RNTI
                                                                          OPTIONAL.
                                       RRC-StateIndicator,
       rrc-StateIndicator
       utran-DRX-CycleLengthCoeff
                                      UTRAN-DRX-CycleLengthCoefficient
                                                                          OPTIONAL,
       rlc-Re-establishIndicatorRb2-3or4
                                              BOOLEAN,
       rlc-Re-establishIndicatorRb5orAbove
                                              BOOLEAN,
    -- CN information elements
                                      CN-InformationInfo
       cn-InformationInfo
                                                                          OPTIONAL,
    -- UTRAN mobility IEs
       ura-Identity
                                      URA-Identity
                                                                          OPTIONAL,
    -- Radio bearer IEs
       rb-InformationReleaseList
                                       RB-InformationReleaseList
                                                                          OPTIONAL,
        rb-InformationReconfigList
                                       RB-InformationReconfigList
                                                                          OPTIONAL,
       rb-InformationAffectedList
                                       RB-InformationAffectedList
                                                                          OPTIONAL,
       OPTIONAL,
    -- Transport channel IEs
       ul-CommonTransChInfo
                                       UL-CommonTransChInfo
                                                                          OPTIONAL,
       ul-deletedTransChInfoList
                                       UL-DeletedTransChInfoList
                                                                          OPTIONAL,
       ul-AddReconfTransChInfoList
                                       UL-AddReconfTransChInfoList
                                                                          OPTIONAL,
```

```
SEQUENCE {
                -- dummy and dummy2 are not used in this version of the specification, they should
                -- not be sent and if received they should be ignored.
                                                 CPCH-SetID
                                                                               OPTIONAL,
                dummy
                dummy2
                                                  DRAC-StaticInformationList OPTIONAL
            },
            tdd
                                             NULL
        dl-CommonTransChInfo
dl-DeletedTransChInfoList
dl-AddReconfTransChInfoList
DL-AddReconfTransChInfoList
DL-AddReconfTransChInfoList
                                                                               OPTIONAL,
                                                                              OPTIONAL,
                                                                              OPTIONAL.
    -- Physical channel IEs
                                       FrequencyInfo
                                                                              OPTIONAL,
        frequencyInfo
       maxAllowedUL-TX-Power
ul-ChannelRequirement
modeSpecificPhysChInfo
                                         MaxAllowedUL-TX-Power
                                                                               OPTIONAL,
                                        UL-ChannelRequirement
                                                                              OPTIONAL,
                                       CHOICE {
            fdd
                                             SEQUENCE {
                -- dummy is not used in this version of specification, it should
                -- not be sent and if received it should be ignored.
                                                 DL-PDSCH-Information
                                                                              OPTIONAL
                dummy
            },
            tdd
                                             NULL
                                      DL-CommonInformation
        dl-CommonInformation
                                                                              OPTIONAL.
        dl-InformationPerRL-List
                                        DL-InformationPerRL-List
                                                                               OPTIONAL
}
CellUpdateConfirm-v3a0ext ::= SEQUENCE {
    -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received the UE behaviour
    -- is unspecified
    new-DSCH-RNTI
                                DSCH-RNTI
                                                                           OPTIONAL
}
CellUpdateConfirm-v4b0ext-IEs ::= SEQUENCE {
     - Physical channel IEs
        -- dummy is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored.
        dummv
                                             SSDT-III.
                                                                                  OPTIONAL,
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
        cell-id-PerRL-List
                                             CellIdentity-PerRL-List
                                                                                  OPTIONAL
}
CellUpdateConfirm-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List DL-TPC-PowerOffsetPerRL-List
                                                                             OPTIONAL
}
CellUpdateConfirm-v5d0ext-IEs ::= SEQUENCE {
    --Radio Bearer IEs
       pdcp-ROHC-TargetMode
                                         PDCP-ROHC-TargetMode
                                                                              OPTIONAL
CellUpdateConfirm-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo
                                         IntegrityProtectionModeInfo
                                                                               OPTIONAL.
        cipheringModeInfo
                                         CipheringModeInfo
                                                                               OPTIONAL,
        activationTime
                                        ActivationTime
                                                                               OPTIONAL,
        new-U-RNTI
                                         U-RNTI
                                                                               OPTIONAL.
                                        C-RNTI
        new-C-RNTT
                                                                               OPTIONAL.
        -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
        -- the UE behaviour is unspecified
                                   DSCH-RNTI
        new-DSCH-RNTI
        rrc-StateIndicator RRC-StateIndicator, utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
        rlc-Re-establishIndicatorRb2-3or4
                                                 BOOLEAN,
        rlc-Re-establishIndicatorRb5orAbove BOOLEAN,
    -- CN information elements
        cn-InformationInfo
                                        CN-InformationInfo
                                                                               OPTIONAL.
    -- UTRAN mobility IEs
        ura-Identity
                                        URA-Identity
                                                                               OPTIONAL,
    -- Radio bearer IEs
       rb-InformationReleaseList
rb-InformationReconfigList
rb-InformationAffectedList
RB-InformationAffectedList
RB-InformationAffectedList
                                                                              OPTIONAL,
                                                                              OPTIONAL,
                                                                               OPTIONAL,
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo
                                                                              OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                        UL-CommonTransChInfo-r4
                                                                              OPTIONAL,
```

```
ul-AddReconfTransChInfoList
ul-AddReconfTransChInfoList
ul-AddReconfTransChInfoList
cHOICE {
fdd
                                                                                     OPTIONAL,
                                           UL-AddReconfTransChInfoList
                                                                                    OPTIONAL,
                  -- dummy and dummy2 are not used in this version of the specification, they should
                  -- not be sent and if received they should be ignored.
                                                     CPCH-SetID
                                                                                     OPTIONAL.
                                                     DRAC-StaticInformationList OPTIONAL
                 dummy2
             },
             tdd
                                                NULL
        },
        dl-CommonTransChInfo DL-CommonTransChInfo-r4
dl-DeletedTransChInfoList DL-DeletedTransChInfoList
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4
                                                                                     OPTIONAL.
                                                                                    OPTIONAL.
    -- Physical channel IEs
        frequencyInfo
                                            FrequencyInfo
                                                                                     OPTIONAL,
        maxAllowedUL-TX-Power
                                          MaxAllowedUL-TX-Power
                                                                                    OPTIONAL,
                                            UL-ChannelRequirement-r4
        ul-ChannelRequirement
                                                                                    OPTIONAL.
                                            CHOICE {
        modeSpecificPhysChInfo
                                                SEQUENCE {
                 -- dummy is not used in this version of specification, it should
                  -- not be sent and if received it should be ignored.
                                                     DL-PDSCH-Information
                                                                                    OPTIONAL
             },
             tdd
                                                NULL
        dl-CommonInformation
                                          DL-CommonInformation-r4
                                                                                    OPTIONAL.
        dl-InformationPerRL-List
                                          DL-InformationPerRL-List-r4
                                                                                    OPTIONAL
}
CellUpdateConfirm-r5-IEs ::= SEQUENCE {
     - User equipment IEs
        integrityProtectionModeInfo
                                           IntegrityProtectionModeInfo
                                                                                     OPTIONAL,
        cipheringModeInfo
                                            CipheringModeInfo
                                                                                     OPTIONAL,
        activationTime
                                            ActivationTime
                                                                                     OPTIONAL,
                                            U-RNTI
        new-U-RNTI
                                                                                     OPTIONAL,
        new-C-RNTI
                                            C-RNTI
         -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
         -- the UE behaviour is unspecified
        new-DSCH-RNTI
                                            DSCH-RNTI
                                                                                     OPTIONAL,
        new-H-RNTI
                                           H-RNTI
        rrc-StateIndicator
                                           RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient
                                                                                    OPTIONAL.
        rlc-Re-establishIndicatorRb2-3or4
                                                     BOOLEAN,
        rlc-Re-establishIndicatorRb5orAbove BOOLEAN,
    -- CN information elements
        cn-InformationInfo
                                            CN-InformationInfo
                                                                                     OPTIONAL.
    -- UTRAN mobility IEs
        ura-Identity
                                          URA-Identity
                                                                                     OPTIONAL,
    -- Radio bearer IEs
        rb-InformationReleaseList RB-InformationReleaseList rb-InformationReconfigList RB-InformationReconfigList-r5 rb-InformationAffectedList RB-InformationAffectedList-r5
                                                                                     OPTIONAL,
                                                                                     OPTIONAL.
                                                                                     OPTIONAL,
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
    -- Transport channel IEs
                                           UL-CommonTransChInfo-r4
        ul-CommonTransChInfo
                                                                                    OPTIONAL,
        ul-deletedTransChInfoList
        ul-deletedTransChInfoList
ul-AddReconfTransChInfoList
modeSpecificTransChInfo
                                           UL-DeletedTransChInfoList
                                                                                     OPTIONAL,
                                            UL-AddReconfTransChInfoList
                                                                                    OPTIONAL,
        modeSpecificTransChInfo
                                           CHOICE {
                                                SEQUENCE {
             fdd
                  -- dummy and dummy2 are not used in this version of the specification, they should
                  -- not be sent and if received they should be ignored.
                                                     CPCH-SetID
                 dummv2
                                                     DRAC-StaticInformationList OPTIONAL
             tdd
                                                 NULL
        dl-CommonTransChInfo DL-CommonTransChInfo-r4
dl-DeletedTransChInfoList DL-DeletedTransChInfoList-r5
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5
                                                                                    OPTIONAL.
                                                                                    OPTIONAL,
    -- Physical channel IEs
        frequencyInfo
                                            FrequencyInfo
                                                                                    OPTIONAL.
        maxAllowedUL-TX-Power
                                            MaxAllowedUL-TX-Power
                                                                                     OPTIONAL,
        ul-ChannelRequirement
                                            UL-ChannelRequirement-r5
                                                                                    OPTIONAL.
        modeSpecificPhysChInfo
                                            CHOICE {
                                                 SEQUENCE {
             fdd
                   - dummy is not used in this version of specification, it should
                  -- not be sent and if received it should be ignored.
```

```
dummy
                                                 DL-PDSCH-Information
                                                                              OPTIONAL
            },
            tdd
                                             NULL
        dl-HSPDSCH-Information
                                        DL-HSPDSCH-Information
                                                                              OPTIONAL,
        dl-CommonInformation
                                        DL-CommonInformation-r5
                                                                             OPTIONAL,
        dl-InformationPerRL-List DL-InformationPerRL-List-r5
                                                                             OPTIONAL
CellUpdateConfirm-r6-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo
                                        IntegrityProtectionModeInfo
                                                                              OPTIONAL,
        cipheringModeInfo
                                         CipheringModeInfo
                                                                              OPTIONAL,
        activationTime
                                        ActivationTime
                                                                             OPTIONAL,
        new-U-RNTI
                                        U-RNTI
                                                                              OPTIONAL,
        new-C-RNTI
                                         C-RNTI
                                                                              OPTIONAL,
        -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
        -- and if received the UE behaviour is unspecified
        new-DSCH-RNTI
                                        DSCH-RNTI
                                                                              OPTIONAL,
        new-H-RNTI
                                        H-RNTI
                                                                              OPTIONAL,
        newPrimary-E-RNTI
                                        E-RNTI
                                                                              OPTIONAL,
        newSecondary-E-RNTI
                                        E-RNTI
                                                                              OPTIONAL,
        rrc-StateIndicator RRC-StateIndicator, utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient
                                                                             OPTIONAL,
        rlc-Re-establishIndicatorRb2-3or4
                                                 BOOLEAN.
        rlc-Re-establishIndicatorRb5orAbove
                                                 BOOLEAN,
    -- CN information elements
                                        CN-InformationInfo-r6
        cn-InformationInfo
                                                                              OPTIONAL.
    -- UTRAN mobility IEs
        ura-Identity
                                        URA-Identity
                                                                              OPTIONAL,
    -- Radio bearer IEs
        rp-intormationReleaseList
rb-InformationReconfigList
rb-InformationAffectedList
dl-CounterStrackers
                                                                              OPTIONAL,
                                                                              OPTIONAL,
                                                                              OPTIONAL,
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5
                                                                              OPTIONAL,
        pdcp-ROHC-TargetMode
                                        PDCP-ROHC-TargetMode
                                                                             OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                        UL-CommonTransChInfo-r4
                                                                              OPTIONAL,
        ul-deletedTransChInfoList UL-DeletedTransChInfoList-r6
ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList-r6
                                                                              OPTIONAL,
        dl-DeletedTransChInfoList
        dl-CommonTransChInfo
                                        DL-CommonTransChInfo-r4
                                                                              OPTIONAL.
                                         DL-DeletedTransChInfoList-r5
                                                                              OPTIONAL,
        dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5
                                                                              OPTIONAL,
    -- Physical channel IEs
                                                                              OPTIONAL,
        frequencyInfo
                                        FrequencyInfo
        maxAllowedUL-TX-Power
                                        MaxAllowedUL-TX-Power
                                                                              OPTIONAL,
        ul-DPCH-Info
                                        UL-DPCH-Info-r6
                                                                              OPTIONAL,
        ul-EDCH-Information
                                        UL-EDCH-Information-r6
        dl-HSPDSCH-Information
                                        DL-HSPDSCH-Information-r6
                                                                             OPTIONAL,
        dl-CommonInformation
                                        DL-CommonInformation-r6
                                                                              OPTIONAL.
        dl-InformationPerRL-List
                                       DL-InformationPerRL-List-r6
                                                                             OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo
                                        MBMS-PL-ServiceRestrictInfo-r6
                                                                              OPTIONAL
}
CellUpdateConfirm-v690ext-IEs ::= SEQUENCE {
    -- Core network IEs
                                         PLMN-Identity
        primary-plmn-Identity
                                                                              OPTIONAL.
    -- Physical channel IEs
        -- The IE harq-Preamble-Mode should not be used in the r3 and r4 versions of the message
        -- If included in the r3 or r4 version of the message, the UE should ignore the IE
        harg-Preamble-Mode
                                        HARQ-Preamble-Mode
                                                                             OPTIONAL,
                                        BEACON-PL-Est
        beaconPLEst
                                                                              OPTIONAL,
        postVerificationPeriod
                                        ENUMERATED { true }
                                                                             OPTIONAL,
                                        DHS-Sync
                                                                              OPTIONAL,
        dhs-sync
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo
                                        MBMS-PL-ServiceRestrictInfo-r6
                                                                             OPTIONAL
}
CellUpdateConfirm-v6b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-InformationPerRL-List-v6b0ext DL-InformationPerRL-List-v6b0ext
                                                                                 OPTIONAL
}
CellUpdateConfirm-r7-IEs ::= SEQUENCE {
    -- User equipment IEs
        \verb|integrityProtectionModeInfo|\\
                                         IntegrityProtectionModeInfo-r7
                                                                              OPTIONAL.
        cipheringModeInfo
                                         CipheringModeInfo-r7
                                                                              OPTIONAL,
```

}

}

}

}

}

```
activationTime
                                                       ActivationTime
                                                                                                           OPTIONAL,
           new-U-RNTI
                                                       U-RNTI
                                                                                                           OPTIONAL,
          new-C-RNTI
                                                       C-RNTI
                                                                                                           OPTIONAL,
           -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
           -- and if received the UE behaviour is unspecified
                                                      DSCH-RNTI
           new-DSCH-RNTI
                                                                                                          OPTIONAL,
                                                      H-RNTI
E-RNTI
           new-H-RNTI
                                                                                                           OPTIONAL.
          newPrimary-E-RNTI
          newPrimary-E-RNTI
newSecondary-E-RNTI
rrc-StateIndicator
utran-DRX-CycleLengthCoeff
...

RRC-StateIndicator,
UTRAN-DRX-CycleLengthCoefficient-r7
WaitTime
OPTIONAL,
OPTIONAL,
                                                                                                           OPTIONAL,
           rlc-Re-establishIndicatorRb2-3or4
                                                                   BOOLEAN.
           rlc-Re-establishIndicatorRb5orAbove
                                                                   BOOLEAN,
     -- CN information elements
          cn-InformationInfo
                                                       CN-InformationInfo-r6
                                                                                                          OPTIONAL,
     -- UTRAN mobility IEs
           ura-Identity
                                                       URA-Identity
                                                                                                           OPTIONAL,
          supportForChangeOfUE-Capability BOOLEAN
                                                                                                           OPTIONAL,
     -- Radio bearer IEs
           rb-InformationReleaseList RB-InformationReleaseList OPTIONAL, rb-InformationReconfigList RB-InformationReconfigList-r7 OPTIONAL, rb-InformationAffectedList RB-InformationAffectedList-r7 OPTIONAL,
          rb-InformationReleaseList
           dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
           pdcp-ROHC-TargetMode
                                             PDCP-ROHC-TargetMode
                                                                                                          OPTIONAL.
     -- Transport channel IEs
          ul-CommonTransChInfo-r4
ul-deletedTransChInfoList
ul-AddReconfTransChInfoList
ul-AddReconfTransChInfoList
ul-AddReconfTransChInfoList
ul-AddReconfTransChInfoList
ul-AddReconfTransChInfoList-r7
oPTIONAL,
dl-CommonTransChInfo
DL-CommonTransChInfo-r4
oPTIONAL,
dl-DeletedTransChInfoList
DL-DeletedTransChInfoList-r7
oPTIONAL,
dl-AddReconfTransChInfoList
DL-AddReconfTransChInfoList-r7
oPTIONAL,
     -- Physical channel IEs
                                                      FrequencyInfo
                                                                                                          OPTIONAL.
           frequencyInfo
          frequencyInfo FrequencyInfo
multi-frequencyInfo Multi-frequencyInfo-LCR-r7
dtx-drx-TimingInfo DTX-DRX-TimingInfo-r7
dtx-drx-Info DTX-DRX-Info-r7
hs-scch-LessInfo HS-SCCH-LessInfo-r7
                                                                                                      OPTIONAL,
                                                                                                          OPTIONAL,

    dux-arx-info
    DTX-DRX-Info-r7

    hs-scch-LessInfo
    HS-SCCH-LessInfo-r7

    mimoParameters
    MIMO-Parameters-r7

    maxAllowedUL-TX-Power
    MaxAllowedUL-TX-Power

    ul-DPCH-Info
    UL-DPCH-Info-r7

    ul-EDCH-Information
    UL-EDCH-Information-r7

    dl-HSPDSCH-Information-r7
    DL-HSPDSCH-Information-r7

    dl-CommonInformation
    DL-CommonInformation-r7

    dl-InformationPerRL-List
    DL-InformationPerRL-List-r7

                                                                                                          OPTIONAL,
                                                                                                         OPTIONAL,
                                                                                                         OPTIONAL,
                                                                                                          OPTIONAL,
                                                                                                          OPTIONAL.
                                                                                                      OPTIONAL,
                                                                                                          OPTIONAL,
                                                                                                          OPTIONAL,
     -- MBMS IEs
          mbms-PL-ServiceRestrictInfo MBMS-PL-ServiceRestrictInfo-r6
                                                                                                         OPTIONAL
CellUpdateConfirm-r7-add-ext-IEs ::= SEQUENCE {
          OPTIONAL,
                OPTIONAL
                OPTIONAL
CellUpdateConfirm-v780ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
hs-DSCH-TBSizeTable
                                                     HS-DSCH-TBSizeTable
                                                                                                          OPTIONAL
CellUpdateConfirm-v7d0ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
ul-EDCH-Information
                                                     UL-EDCH-Information-ext
                                                                                                         OPTIONAL
CellUpdateConfirm-v7f0ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
                                                       MIMO-Parameters-v7f0ext
                                                                                                          OPTIONAL
          mimoParameters
CellUpdateConfirm-v7g0ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
                                                       MIMO-Parameters-v7g0ext
                                                                                                          OPTIONAL
          mimoParameters
```

```
}
    *************
-- CELL UPDATE CONFIRM for CCCH
__ ***************
CellUpdateConfirm-CCCH ::= CHOICE {
                                                                     SEQUENCE {
                 -- User equipment IEs
                      u-RNTI
                                                                            U-RNTI.
                -- The rest of the message is identical to the one sent on DCCH.
                      cellUpdateConfirm-r3 CellUpd
laterNonCriticalExtensions SEQUENCE {
                                                                                         CellUpdateConfirm-r3-IEs,
                               -- Container for additional R99 extensions
                               cellUpdateConfirm-CCCH-r3-add-ext
                                                                                                                    BIT STRING OPTIONAL,
                              cellUpdateConfirm-v690ext CellUpdateConfirm-v690ext-IEs,
nonCriticalExtensions SEQUENCE {} OPTIONAL
                                                            OPTIONAL
                                                      OPTIONAL
                                              OPTIONAL
                                      OPTIONAL
                               OPTIONAL
                                                                    SEQUENCE {
       later-than-r3
                \begin{array}{lll} u\text{-RNTI} & & U\text{-RNTI}, \\ \text{rrc-TransactionIdentifier} & & \text{RRC-TransactionIdentifier}, \end{array} 
               u-RNTI
               criticalExtensions CHOICE {
                                                                            SEQUENCE {
                       r4
                               -- The rest of the message is identical to the one sent on DCCH.
                               -- Container for adding non critical extensions after freezing REL-5
                                       cellUpdateConfirm-CCCH-r4-add-ext BIT STRING
                                                                                                                                                OPTIONAL.
                                      v590NonCriticalExtensions SEQUENCE {
    cellUpdateConfirm-v590ext CellUpdateConfirm-v590ext y5d0NonCriticalExtenstions SEQUENCE {
    cellUpdateConfirm-v5d0ext CellUpdateConfirm-v5d0ext Y690NonCriticalExtensions SEQUENCE {
    cellUpdateConfirm-v5d0ext SEQUENCE {
        CellUpdateConfirm-v5d0ext SEQUENCE {
        CellUpdateConfirm-v5d0ext SEQUENCE {
        CellUpdateConfirm-v5d0ext SEQUENCE {
        CellUpdateConfirm-v5d0ext SEQUENCE {
        CellUpdateConfirm-v5d0ext SEQUENCE {
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        CellUpdateConfirm-v5d0ext SEQUENCE {
        CellUpdateConfirm-v5d0ext SEQUENCE {
        CellUpdateConfirm-v5d0ext SEQUENCE {
        CellUpdateConfirm-v5d0ext SEQUENCE {
        CellUpdateConfirm-v5d0ext SEQUENCE {
        CellUpdateConfirm-
                                                             cellUpdateConfirm-v690ext CellUpdateConfirm-v690ext-IEs,
                                                             nonCriticalExtensions
                                                                                                                          SEQUENCE {} OPTIONAL
                                                             OPTIONAL
                                                      OPTIONAL
                                              OPTIONAL
                                      OPTIONAL
                       },
                       criticalExtensions
                                                                                    CHOICE {
                                      cellUpdateConfirm-r5
                                                                                            CellUpdateConfirm-r5-IEs,
                                       cellUpdateConfirm-CCCH-r5-add-ext BIT STRING OPTIONAL,
                                      cellUpdateConfirm-v690ext CellUpdateConfirm-v690ext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
                                                      OPTIONAL
                                              OPTIONAL
                               criticalExtensions
                                                                                            CHOICE {
                                              SEQUENCE {
cellUpdateConfirm-r6
cellUpdateC
                                              }
                                                   OPTIONAL
                                                                              CHOICE {
                                       criticalExtensions
                                                                                                    SEQUENCE {
                                             r7
                                                     cellUpdateConfirm-r7
                                                                                                                    CellUpdateConfirm-r7-IEs,
```

```
cellUpdateConfirm-r7-add-ext BIT STRING
                                      (CONTAINING CellUpdateConfirm-r7-add-ext-IEs) OPTIONAL,
                           v780NonCriticalExtensions SEQUENCE {
    cellUpdateConfirm-v780ext nonCriticalExtensions SEQUENCE {} OPTIONAL
                            OPTIONAL
                       criticalExtensions SEQUENCE {}
                   }
          }
       }
}
     ***********
-- COUNTER CHECK
__ *******************
CounterCheck ::= CHOICE {
                        SEQUENCE {
       CounterCheck-r3-IEs, laterNonCriticalExtensions
-- Container (
           -- Container for additional R99 extensions
           counterCheck-r3-add-ext BIT STRING OPTIONAL, nonCriticalExtensions SEQUENCE {} OPTIONAL
       } OPTIONAL
      ter-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions SEQUENCE {}
   later-than-r3
}
CounterCheck-r3-IEs ::= SEQUENCE {
   -- User equipment IEs
      rrc-TransactionIdentifier RRC-TransactionIdentifier,
   -- Radio bearer IEs
       rb-COUNT-C-MSB-InformationList RB-COUNT-C-MSB-InformationList
}
__ ****************************
-- COUNTER CHECK RESPONSE
__ ***************
CounterCheckResponse ::= SEQUENCE {
   -- User equipment IEs
       rrc-TransactionIdentifier
                                    RRC-TransactionIdentifier,
   -- Radio bearer IEs
       rb-COUNT-C-InformationList RB-COUNT-C-InformationList OPTIONAL, laterNonCriticalExtensions SEQUENCE {
           -- Container for additional R99 extensions
           nonCriticalExtensions
       } OPTIONAL
}
__ *******************
-- DOWNLINK DIRECT TRANSFER
__ ***************************
DownlinkDirectTransfer ::= CHOICE {
       | SEQUENCE {
| downlinkDirectTransfer-r3 | DownlinkDirectTransfer-r3-IEs, | laterNonCriticalExtensions | SEQUENCE {
           -- Container for additional R99 extensions
           downlinkDirectTransfer-r3-add-ext BIT STRING OPTIONAL,
       nonCriticalExtensions
} OPTIONAL
                                        SEQUENCE {} OPTIONAL
       SEQUENCE {
rrc-TransactionIdentifier RRC-Tr
   later-than-r3
                                   RRC-TransactionIdentifier,
```

```
criticalExtensions
                                     SEQUENCE {}
}
DownlinkDirectTransfer-r3-IEs ::= SEQUENCE {
   -- User equipment IEs
       rrc-TransactionIdentifier
                                   RRC-TransactionIdentifier,
   -- Core network IEs
       cn-DomainIdentity
                                      CN-DomainIdentity,
       nas-Message
                                      NAS-Message
}
  **************
-- HANDOVER TO UTRAN COMMAND
__ ****************
HandoverToUTRANCommand ::= CHOICE {
                                  SEQUENCE {
                                   HandoverToUTRANCommand-r3-IEs,
       handoverToUTRANCommand-r3
       nonCriticalExtensions
                                      SEQUENCE {} OPTIONAL
   criticalExtensions
                                 CHOICE {
           HandoverToUTRANCommand-r4-IEs, nonCriticalExtensions

SEQUENCE {}

OPTIONAT
       r4
       }.
       criticalExtensions
                                      CHOICE {
                                         SEQUENCE {
           r5
                                         HandoverToUTRANCommand-r5-IEs,
               handoverToUTRANCommand-r5
               nonCriticalExtensions
                                             SEQUENCE {} OPTIONAL
                                 CHOICE {
           criticalExtensions
                                            SEQUENCE {
                   handoverToUTRANCommand-r6
                                             HandoverToUTRANCommand-r6-IEs, SEQUENCE {
                   v6b0NonCriticalExtensions
                       \verb| handoverToUTRANCommand-v6b0ext | HandoverToUTRANCommand-v6b0ext-IEs|,
                       nonCriticalExtensions
                                                     SEQUENCE {}
                                                                    OPTIONAL
                       OPTIONAL
               }.
               criticalExtensions
                                            CHOICE {
                                                 SEQUENCE {
                                                 HandoverToUTRANCommand-r7-IEs,
                       handoverToUTRANCommand-r7
                       v780NonCriticalExtensions
                                                     SEQUENCE {
                          handoverToUTRANCommand-v780ext HandoverToUTRANCommand-v780ext-IEs, v820NonCriticalExtensions SEQUENCE {
                              handoverToUTRANCommand-v820ext HandoverToUTRANCommand-v820ext-IEs,
                              v7d0NonCriticalExtensions
                                                             SEQUENCE {
                                  handoverToUTRANCommand-v7d0ext
                                                             HandoverToUTRANCommand-v7d0ext-IEs,
                                  nonCriticalExtensions
                                                                 SEQUENCE {}
                                                                              OPTIONAL
                                  OPTIONAL
                              OPTIONAL
                       }
                         OPTIONAL
                   criticalExtensions
                                                SEQUENCE {}
          }
      }
   }
}
HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
                                      U-RNTI-Short,
       new-U-RNTI
       -- dummy is not used in this version of specification, it should
        -- not be sent and if received it should be ignored.
       dummy
                                      ActivationTime
                                                                        OPTIONAL.
       cipheringAlgorithm
                                      CipheringAlgorithm
                                                                         OPTIONAL,
    -- Radio bearer IEs
   -- Specification mode information
                                   CHOICE {
       specificationMode
                                        SEQUENCE {
               rab-InformationSetupList SRB-InformationSetupList, RAB-InformationSetupList ul-CommonTransChInfo
           complete
                                              RAB-InformationSetupList
                                                                               OPTIONAL.
```

```
ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
                dl-CommonTransChInfo
                                                  DL-CommonTransChInfo,
                dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList,
                ul-DPCH-Info
                                                  UL-DPCH-Info,
                modeSpecificInfo
                                                  CHOICE {
                                                      SEQUENCE {
                     fdd
                         -- dummy and dummy2 are not used in this version of specification,
                         -- they should not be sent and if received they should be ignored.
                         dummy
                                                           DL-PDSCH-Information OPTIONAL,
                         dummy2
                                                           CPCH-SetInfo
                                                                               OPTIONAL
                     },
                     tdd
                                                      NULL
                DL-CommonInformation, dl-InformationPerRL-List DL-InformationPerRL-L frequencyInfo FrequencyInfo
                                                  DL-InformationPerRL-List,
                                            SEQUENCE {
            preconfiguration
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
                                                  CHOICE {
                preConfigMode
                                                  PredefinedConfigIdentity,
                    predefinedConfigIdentity
                     defaultConfig
                                                      SEQUENCE {
                         defaultConfigMode
                                                          DefaultConfigMode.
                         defaultConfigIdentity
                                                          DefaultConfigIdentity
                },
                rab-Info
                                                  RAB-Info-Post
                                                  CHOICE {
                modeSpecificInfo
                                                  SEQUENCE {
                    fdd
                         ul-DPCH-Info
                                                      UL-DPCH-InfoPostFDD,
                         dl-CommonInformationPost
                                                          DL-CommonInformationPost,
                         dl-InformationPerRL-List
                                                        DL-InformationPerRL-ListPostFDD,
                         frequencyInfo
                                                          FrequencyInfoFDD
                                                          SEQUENCE {
                         ul-DPCH-Info
                                                          UL-DPCH-InfoPostTDD,
                                                      DL-CommonInformationPost,
DL-InformationPost,
DL-InformationPost
                         dl-CommonInformationPost
                         dl-InformationPerRL
                         frequencyInfo
                                                          FrequencyInfoTDD,
                                                         PrimaryCCPCH-TX-Power
                         primaryCCPCH-TX-Power
                }
            }
    -- Physical channel IEs
        maxAllowedUL-TX-Power
                                       MaxAllowedIII.-TX-Power
HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        new-U-RNTI
                                          U-RNTI-Short,
        cipheringAlgorithm
                                         CipheringAlgorithm
                                                                              OPTIONAL,
    -- Radio bearer IEs
    -- Specification mode information
                                         CHOICE {
        specificationMode
                - InformationSetupList SRB-InformationSetupList, rab-InformationSetupList RAB-InformationSetupList ul-CommonTransChInfo
                                          SEQUENCE {
            complete
                                                  RAB-InformationSetupList-r4
                                                                                       OPTIONAL.
                ul-AddReconfTransChInfoList
                                                  UL-AddReconfTransChInfoList,
                dl-CommonTransChInfo
                                                DL-CommonTransChInfo-r4,
                dl-AddReconfTransChInfoList
                                                  DL-AddReconfTransChInfoList-r4,
                                                  UL-DPCH-Info-r4,
                ul-DPCH-Info
                modeSpecificInfo
                                                  CHOICE {
                                                      SEQUENCE {
                         -- dummy and dummy2 are not used in this version of specification,
                         -- they should not be sent and if received they should be ignored.
                                                          DL-PDSCH-Information OPTIONAL,
                         dummy
                         dummy2
                                                           CPCH-SetInfo
                                                                               OPTIONAL
                     },
                     tdd
                                                      NULL
                dl-CommonInformation DL-CommonInformation-r4, dl-InformationPerRL-List DL-InformationPerRL-List-r4,
                 frequencyInfo
                                                  FrequencyInfo
            },
```

```
preconfiguration
                                             SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
                 preConfigMode
                                                   CHOICE {
                                                   PredefinedConfigIdentity,
                     predefinedConfigIdentity
                     defaultConfig
                                                      SEQUENCE {
                                                     DefaultConfigMode,
DefaultConfigIdentity-r4
                         defaultConfigMode
                         defaultConfigIdentity
                 },
                 rab-Info
                                                   RAB-Info-Post
                                                                       OPTIONAL.
                 modeSpecificInfo
                                                   CHOICE {
                     fdd
                                                      SEQUENCE {
                                                       UL-DPCH-InfoPostFDD,
DL-CommonInformationPost,
                         ul-DPCH-Info
                         dl-CommonInformationPost
                         dl-InformationPerRL-List
                                                         DL-InformationPerRL-ListPostFDD, FrequencyInfoFDD
                         frequencyInfo
                     }.
                     t.dd
                                                       CHOICE {
                                                         SEQUENCE {
                         tdd384
                             ul-DPCH-Info
                                                             UL-DPCH-InfoPostTDD,
                             dl-InformationPerRL
                                                                DL-InformationPerRL-PostTDD,
                             frequencyInfo
                                                               FrequencyInfoTDD,
                             primaryCCPCH-TX-Power
                                                              PrimaryCCPCH-TX-Power
                         tdd128
                                                           SEQUENCE {
                                                           UL-DPCH-InfoPostTDD-LCR-r4,
                             ul-DPCH-Info
                             dl-InformationPerRL
                                                               DL-InformationPerRL-PostTDD-LCR-r4,
                             frequencyInfo
                                                               FrequencyInfoTDD,
                             primaryCCPCH-TX-Power
                                                               PrimaryCCPCH-TX-Power
                     }
                }
            }
    -- Physical channel IEs
        maxAllowedIII,-TX-Power
                                        MaxAllowedIII.-TX-Power
}
HandoverToUTRANCommand-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
                                          U-RNTI-Short.
       new-U-RNTI
        cipheringAlgorithm
                                          CipheringAlgorithm
                                                                               OPTIONAL.
    -- Radio bearer IEs
    -- Specification mode information
        specificationMode
                                         CHOICE {
                                           SEQUENCE {
            complete
                 srb-InformationSetupListSRB-InformationSetupList-r5,rab-InformationSetupListRAB-InformationSetupList-r5ul-CommonTransChInfoUL-CommonTransChInfo-r4,
                                                                                         OPTIONAL,
                 ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
                 dl-CommonTransChInfo
                                                  DL-CommonTransChInfo-r4,
                 dl-AddReconfTransChInfoList
                                                 DL-AddReconfTransChInfoList-r5,
                 ul-DPCH-Info
                                                   UL-DPCH-Info-r5,
                                                   CHOICE {
                 modeSpecificInfo
                                                      SEQUENCE {
                         -- dummy and dummy2 are not used in this version of specification,
                          -- they should not be sent and if received they should be ignored.
                                                           DL-PDSCH-Information OPTIONAL,
                         dummy
                         dummy2
                                                           CPCH-SetInfo
                                                                                OPTIONAL.
                     },
                     tdd
                                                       NULL
                 dl-CommonInformation
                                                 DL-CommonInformation-r4,
                 dl-InformationPerRL-List
                                                   DL-InformationPerRL-List-r5,
                 frequencyInfo
                                                   FrequencyInfo
                                              SEQUENCE {
            preconfiguration
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
                 preConfigMode
                                                   CHOICE {
                     predefinedConfigIdentity PredefinedConfigIdentity,
defaultConfig SEQUENCE {
    defaultConfigMode DefaultConfigMode,
                         defaultConfigIdentity
                                                           DefaultConfigIdentity-r5
```

```
rab-Info
                                                 RAB-Info-Post
                                                                      OPTIONAL,
                modeSpecificInfo
                                                 CHOICE {
                    fdd
                                                     SEOUENCE {
                        ul-DPCH-Info
                                                         UL-DPCH-InfoPostFDD,
                        dl-CommonInformationPost
                                                         DL-CommonInformationPost,
                        dl-InformationPerRL-List
                                                         DL-InformationPerRL-ListPostFDD,
                        frequencyInfo
                                                         FrequencyInfoFDD
                    tdd
                                                      CHOICE {
                                                         SEQUENCE {
                        tdd384
                            ul-DPCH-Info
                                                              UL-DPCH-InfoPostTDD,
                             dl-InformationPerRL
                                                              DL-InformationPerRL-PostTDD,
                             frequencyInfo
                                                              FrequencyInfoTDD,
                            primaryCCPCH-TX-Power
                                                             PrimaryCCPCH-TX-Power
                        tdd128
                                                          SEQUENCE {
                            ul-DPCH-Info
                                                             UL-DPCH-InfoPostTDD-LCR-r4,
                             dl-InformationPerRL
                                                             DL-InformationPerRL-PostTDD-LCR-r4,
                             frequencyInfo
                                                             FrequencyInfoTDD,
                            primaryCCPCH-TX-Power
                                                              PrimaryCCPCH-TX-Power
                        }
                    }
                }
            }
    -- Physical channel IEs
       maxAllowedUL-TX-Power
                                       MaxAllowedUL-TX-Power
}
HandoverToUTRANCommand-r6-IEs ::= SEQUENCE {
    -- User equipment IEs
       new-U-RNTI
                                         U-RNTI-Short,
       cipheringAlgorithm
                                         CipheringAlgorithm
                                                                             OPTIONAL.
    -- Radio bearer IEs
    -- Specification mode information
        specificationMode
                                        CHOICE {
                                          SEQUENCE {
            complete
                                             SRB-InformationSetupList-r6,
                srb-InformationSetupList
                rab-InformationSetupList
                                                 RAB-InformationSetupList-r6
                                                                                  OPTIONAL,
                ul-CommonTransChInfo
                                               UL-CommonTransChInfo-r4,
                ul-AddReconfTransChInfoList
dl-CommonTransChInfoList
dl-AddReconfTransChInfoList
DL-CommonTransChInfo-r4,
DL-AddReconfTransChInfo-r4,
DL-AddReconfTransChInfoList-r5,
                ul-DPCH-Info
                                                 UL-DPCH-Info-r6,
                ul-EDCH-Information
                                                 UL-EDCH-Information-r6
                                                                                  OPTIONAL,
                dl-HSPDSCH-Information
                                                 DL-HSPDSCH-Information-r6
                                                                                  OPTIONAL,
                dl-CommonInformation
                                                 DL-CommonInformation-r6,
                dl-InformationPerRL-List
                                                 DL-InformationPerRL-List-r6,
                frequencyInfo
                                                 FrequencyInfo
            preconfiguration
                                            SEQUENCE {
                -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
                -- one for the FDD only elements and one for the TDD only elements, so that one
                -- FDD/TDD choice in this level is sufficient.
                {\tt preConfigMode}
                                                 CHOICE {
                    predefinedConfigIdentity
                                                 PredefinedConfigIdentity,
                    defaultConfig
                                                     SEQUENCE {
                        defaultConfigMode
                                                         DefaultConfigMode,
                        defaultConfigIdentity
                                                          DefaultConfigIdentity-r6
                rab-Info
                                                 RAB-Info-Post
                                                                      OPTIONAL,
                modeSpecificInfo
                                                 CHOICE {
                                                      SEQUENCE {
                    fdd
                        ul-DPCH-Info
                                                          UL-DPCH-InfoPostFDD,
                        dl-CommonInformationPost
                                                          DL-CommonInformationPost,
                        dl-InformationPerRL-List
                                                          DL-InformationPerRL-ListPostFDD,
                        frequencyInfo
                                                         FrequencyInfoFDD
                    },
                    tdd
                                                      CHOICE {
                                                        SEQUENCE {
                        tdd384
                            ul-DPCH-Info
                                                             UL-DPCH-InfoPostTDD,
                             dl-InformationPerRL
                                                              DL-InformationPerRL-PostTDD,
                             frequencyInfo
                                                              FrequencyInfoTDD,
                            primaryCCPCH-TX-Power
                                                              PrimaryCCPCH-TX-Power
                         tdd128
                                                          SEQUENCE {
```

```
ul-DPCH-Info
                                                          UL-DPCH-InfoPostTDD-LCR-r4,
                           dl-InformationPerRL
                                                           DL-InformationPerRL-PostTDD-LCR-r4,
                           frequencyInfo
                                                          FrequencyInfoTDD,
                           primaryCCPCH-TX-Power
                                                          PrimaryCCPCH-TX-Power
                   }
               }
           }
    -- Physical channel IEs
       maxAllowedUL-TX-Power
                                     MaxAllowedUL-TX-Power
}
HandoverToUTRANCommand-v6b0ext-IEs ::= SEQUENCE {
    ue-hspa-identities
                                           UE-HSPA-Identities-r6 OPTIONAL
HandoverToUTRANCommand-r7-IEs ::= SEQUENCE {
    -- User equipment IEs
       new-U-RNTI
                                       U-RNTI-Short,
       cipheringAlgorithm
                                       CipheringAlgorithm-r7
                                                                               OPTIONAL,
        supportForChangeOfUE-Capability BOOLEAN,
                                       H-RNTI
                                                                               OPTIONAL,
       newPrimary-E-RNTI
                                      E-RNTI
                                                                               OPTIONAL,
       newSecondary-E-RNTI
                                                                               OPTIONAL,
                                       E-RNTT
    -- Radio bearer IEs
    -- Specification mode information
                                       CHOICE {
        specificationMode
           complete
                                         SEQUENCE {
               srb-InformationSetupList
                                            SRB-InformationSetupList-r7,
                                                                               OPTIONAL,
               dl-AddReconfTransChInfoList

DL-AddReconfTransChInfoList-r7,
               ul-DPCH-Info
                                               UL-DPCH-Info-r7,
                                              UL-EDCH-Information-r7
               ul-EDCH-Information
                                                                              OPTIONAL,
               dl-HSPDSCH-Information
                                              DL-HSPDSCH-Information-r7
DL-CommonInformation-r7,
                                                                              OPTIONAL,
               dl-CommonInformation
               dl-InformationPerRL-List
frequencyInfo
multi-frequencyInfo
DL-InformationPerRL-List-r7,
FrequencyInfo
multi-frequencyInfo
               multi-frequencyInfo
                                               Multi-frequencyInfo-LCR-r7
                                                                             OPTIONAL
           },
           preconfiguration
                                          SEQUENCE {
               -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
               -- one for the FDD only elements and one for the TDD only elements, so that one
               -- FDD/TDD choice in this level is sufficient.
               preConfigMode
                                               CHOICE {
                                               PredefinedConfigIdentity,
                   predefinedConfigIdentity
                   defaultConfig
                                                  SEQUENCE {
                       defaultConfiqMode
                                                       DefaultConfigMode,
                       defaultConfigIdentity
                                                       DefaultConfigIdentity-r6
               },
               rab-Info
                                               RAB-Info-Post
                                                                 OPTIONAL,
                                               CHOICE {
               modeSpecificInfo
                                               SEQUENCE {
                   fdd
                       ul-DPCH-Info
                                                    UL-DPCH-InfoPostFDD,
                       dl-CommonInformationPost
                                                       DL-CommonInformationPost,
                       dl-InformationPerRL-List
                                                     DL-InformationPerRL-ListPostFDD,
                                                      FrequencyInfoFDD
                       frequencyInfo
                    tdd
                                                   CHOICE {
                       tdd384
                                                       SEQUENCE {
                           ul-DPCH-Info
                                                           UL-DPCH-InfoPostTDD,
                           dl-InformationPerRL
                                                           DL-InformationPerRL-PostTDD,
                           frequencyInfo
                                                           FrequencyInfoTDD,
                           primaryCCPCH-TX-Power
                                                          PrimaryCCPCH-TX-Power
                       t.dd128
                                                       SEQUENCE {
                                                          UL-DPCH-Info-r7,
                           ul-DPCH-Info
                           dl-InformationPerRL
                                                           DL-InformationPerRL-PostTDD-LCR-r4,
                           frequencyInfo
                                                          FrequencyInfoTDD,
                           primaryCCPCH-TX-Power
                                                          PrimaryCCPCH-TX-Power,
                                                          Multi-frequencyInfo-LCR-r7 OPTIONAL
                           multi-frequencyInfo
                       tdd768
                                                      SEQUENCE {
                           ul-DPCH-Info
                                                           UL-DPCH-Info-r7,
```

```
dl-InformationPerRL DL-InformationPerRL-List-r7,
                       frequencyInfo
                                                 FrequencyInfoTDD,
                       primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
                   }
                }
            }
         }
   -- Physical channel IEs
      maxAllowedUL-TX-Power
                               MaxAllowedUL-TX-Power
}
HandoverToUTRANCommand-v780ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
      hs-DSCH-TBSizeTable
                                HS-DSCH-TBSizeTable
                                                             OPTIONAL
}
HandoverToUTRANCommand-v7d0ext-IEs ::= SEQUENCE {
   -- Physical channel IEs
      ul-EDCH-Information
                                UL-EDCH-Information-ext
                                                             OPTIONAL
}
HandoverToUTRANCommand-v820ext-IEs ::= SEQUENCE {
   -- Radio bearer IEs
      -- 'dummy' is reserved to ensure compatibility with future v820 extension. It shall
      -- be ignored by a UE not having support for the v820 feature.
                                RAB-InformationSetupList-v820ext OPTIONAL
}
__ *****************
-- HANDOVER TO UTRAN COMPLETE
__ ***************
HandoverToUTRANComplete ::= SEQUENCE {
  --TABULAR: Integrity protection shall not be performed on this message.
   -- User equipment IEs
   -- TABULAR: startList is conditional on history.
      startList
                                STARTList
                                                              OPTIONAL.
   -- Radio bearer IEs
      count-C-ActivationTime
                                                              OPTIONAL,
          -- Container for additional R99 extensions
         handoverToUTRANComplete-r3-add-ext BIT STRING OPTIONAL,
                              SEQUENCE {} OPTIONAL
         nonCriticalExtensions
      } OPTIONAL
}
__ ***************
-- INITIAL DIRECT TRANSFER
__ ****************
InitialDirectTransfer ::= SEQUENCE {
   -- Core network IEs
      cn-DomainIdentity
      nas-Message
   -- Measurement IEs
      measuredResultsOnRACH MeasuredResultsOnRACH v3a0NonCriticalExtensions SEQUENCE {
                                                             OPTIONAL,
      initialDirectTransfer-v3a0ext
laterNonCriticalExtensions
InitialDirectTransfer-v3a0ext,
SEQUENCE {
          -- Container for additional R99 extensions
         initialDirectTransfer-r3-add-ext BIT STRING
                         (CONTAINING InitialDirectTransfer-r3-add-ext-IEs)
                                                                      OPTIONAL,
             v590NonCriticalExtensions SEQUENCE {
                initialDirectTransfer-v770ext InitialDirectTransfer-v770ext-IEs,
                      nonCriticalExtensions
                                                SEQUENCE {} OPTIONAL
                        OPTIONAL
                      OPTIONAL
                   OPTIONAL
```

```
OPTIONAL
       } OPTIONAL
}
InitialDirectTransfer-v3a0ext ::= SEQUENCE {
  -- start-value shall always be included in this version of the protocol
                                  START-Value
InitialDirectTransfer-v590ext ::= SEQUENCE {
   establishmentCause EstablishmentCause OPTIONAL
InitialDirectTransfer-v690ext-IEs ::= SEQUENCE {
   -- Core network IEs
       plmn-Identity
                                      PLMN-Identity
                                                                         OPTIONAL,
   -- Measurement IEs
       measuredResultsOnRACHinterFreq MeasuredResultsOnRACHinterFreq
                                                                        OPTIONAL.
   -- MBMS TES
                                    MBMS-JoinedInformation-r6
      mbms-JoinedInformation
}
InitialDirectTransfer-v770ext-IEs ::= SEQUENCE {
                                      ENUMERATED { speech, video, other, spare } OPTIONAL
       csCallType
initialDirectTransfer-v7g0ext
                                                 InitialDirectTransfer-v7g0ext-IEs,
                                      SEQUENCE {}
   nonCriticalExtensions
                                                  OPTIONAL
}
InitialDirectTransfer-v7g0ext-IEs ::=
                                             SEQUENCE {
   -- Measurement IEs
       measuredResultsOnRACH-v7g0ext MeasuredResultsOnRACH-v7g0ext OPTIONAL
}
__ ****************
-- HANDOVER FROM UTRAN COMMAND
__ ***************
HandoverFromUTRANCommand-GSM ::= CHOICE {
                                  SEOUENCE {
       handoverFromUTRANCommand-GSM-r3
                                     HandoverFromUTRANCommand-GSM-r3-IEs,
        -- UTRAN should not include the IE laterNonCriticalExtensions when it sets the IE
       -- gsm-message included in handoverFromUTRANCommand-GSM-r3 to single-GSM-Message. The UE
        -- behaviour upon receiving a message with this combination of IE values is unspecified.
        laterNonCriticalExtensions
                                    SEQUENCE {
           -- Container for additional R99 extensions
           handoverFromUTRANCommand-GSM-r3-add-ext BIT STRING OPTIONAL,
           -- UTRAN may apply the r3 version of the message to perform PS handover
           -- for a single RAB only
v690NonCriticalExtensions SEQUENCE {
   handoverFromUTRANCommand-GSM-v690ext HandoverFromUTRANCommand-GSM-v690ext-IEs,
               {\tt nonCriticalExtensions} \qquad \qquad {\tt SEQUENCE} \ \{\} \ {\tt OPTIONAL}
              OPTIONAL
       } OPTIONAL
                                 SEQUENCE {
    later-than-r3
       rrc-TransactionIdentifier RRC-TransactionIdentifier, criticalExtensions CHOICE {
                                       SEQUENCE {
               handoverFromUTRANCommand-GSM-r6 HandoverFromUTRANCommand-GSM-r6-IEs,
               {\tt handoverFromUTRANCommand-GSM-r6-add-ext} \qquad {\tt BIT\ STRING\ OPTIONAL},
                                            SEQUENCE {} OPTIONAL
              nonCriticalExtensions
           },
                                        SEQUENCE {}
           criticalExtensions
}
HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
   -- User equipment IEs
       user equipment les
rrc-TransactionIdentifier RRC-TransactionIdentifier,
       activationTime
                                     ActivationTime
                                                                         OPTIONAL,
   -- Radio bearer IEs
       toHandoverRAB-Info
                                     RAB-Info
                                                                         OPTIONAL,
```

```
-- Measurement IEs
       frequency-band
                                      Frequency-Band,
    -- Other IEs
                                      CHOICE {
       qsm-message
           -- In the single-GSM-Message case the following rules apply:
            -- 1> the GSM message directly follows the basic production; the final padding that
                results when PER encoding the abstract syntax value is removed prior to appending
                 the GSM message.
           -- 2> the RRC message excluding the GSM part, does not contain a length determinant;
                 there is no explicit parameter indicating the size of the included GSM message.
           -- 3> depending on need, final padding (all "0"s) is added to ensure the final result
                comprises a full number of octets
           single-GSM-Message
                                          SEQUENCE {},
                                         SEQUENCE {
           gsm-MessageList
              gsm-Messages
                                              GSM-MessageList
       }
}
HandoverFromUTRANCommand-GSM-r6-IEs ::= SEQUENCE {
   -- User equipment IEs
       activationTime
                                     ActivationTime
                                                                         OPTIONAL,
   -- Radio bearer IEs
       toHandoverRAB-Info
                                     RAB-InformationList-r6
                                                                        OPTIONAL,
    -- Measurement IEs
       frequency-band
                                      Frequency-Band,
    -- Other IEs
       gsm-message
                                      CHOICE {
           -- In the single-GSM-Message case the following rules apply:
           -- 1> the GSM message directly follows the basic production; the final padding that
           -- results when PER encoding the abstract syntax value is removed prior to appending
                the GSM message.
           -- 2> the RRC message excluding the GSM part, does not contain a length determinant;
               there is no explicit parameter indicating the size of the included GSM message.
           -- 3> depending on need, final padding (all "0"s) is added to ensure the final result
                comprises a full number of octets
           single-GSM-Message
                                         SEQUENCE { },
           qsm-MessageList
                                          SEQUENCE {
               gsm-Messages
                                              GSM-MessageList
        },
                                          CHOICE {
       geran-SystemInfoType
           sI
                                              GERAN-SystemInformation,
           pSI
                                              GERAN-SystemInformation
            OPTIONAL
}
HandoverFromUTRANCommand-GSM-v690ext-IEs ::= SEQUENCE {
       geran-SystemInfoType CHOICE {
          sI
                                            GERAN-SystemInformation,
           pSI
                                              GERAN-SystemInformation
               OPTIONAL
}
HandoverFromUTRANCommand-GERANIu ::= SEQUENCE {
   rrc-TransactionIdentifier RRC-TransactionIdentifier,
   handoverFromUTRANCommand-GERANIU CHOICE {
                                          SEQUENCE {
           handoverFromUTRANCommand-GERANIu-r5
                                          HandoverFromUTRANCommand-GERANIu-r5-IEs,
           -- UTRAN should not include the IE nonCriticalExtensions when it sets
           -- the IE geranIu-message included in handoverFromUTRANCommand-GERANIu-r5 to
            -- single-GERANIu-Message
           -- The UE behaviour upon receiving a message including this combination of IE values is
           -- not specified
           nonCriticalExtensions
                                         SEQUENCE {} OPTIONAL
       later-than-r5
                                      SEQUENCE {
           criticalExtensions
                                         SEQUENCE {}
   }
HandoverFromUTRANCommand-GERANIu-r5-IEs ::= SEQUENCE {
   -- User equipment IEs
                                                                         OPTIONAL,
       activationTime
                                      ActivationTime
   -- Measurement IEs
       frequency-Band
                                      Frequency-Band,
```

```
-- Other IEs
       qeranIu-Messaqe
                                          CHOICE {
           -- In the single-GERANIu-Message case the following rules apply:
           -- 1> the GERAN Iu message directly follows the basic production; the final padding that
                results when PER encoding the abstract syntax value is removed prior to appending
                the GERAN Iu message.
            -- 2> the RRC message excluding the GERAN Iu part does not contain a length determinant;
     there is no explicit parameter indicating the size of the included GERAN Iu
           -- 3> depending on need, final padding (all "0"s) is added to ensure the final result
                comprises a full number of octets.
           single-GERANIu-Message SEQUENCE {},
geranIu-MessageList SEQUENCE {
   geranIu-Messages GERANIu-MessageList
       }
}
HandoverFromUTRANCommand-CDMA2000 ::= CHOICE {
                                  SEQUENCE {
       handoverFromUTRANCommand-CDMA2000-r3
                                   HandoverFromUTRANCommand-CDMA2000-r3-IEs,
       laterNonCriticalExtensions
                                          SEQUENCE {
            -- Container for additional R99 extensions
           handoverFromUTRANCommand-CDMA2000-r3-add-ext
                                              BIT STRING
                                                             OPTIONAL,
           nonCriticalExtensions
                                              SEQUENCE {} OPTIONAL
       } OPTIONAL
                                 SEQUENCE {
   later-than-r3
       rrc-TransactionIdentifier RRC-TransactionIdentifier,
       criticalExtensions
                                      SEQUENCE {}
}
HandoverFromUTRANCommand-CDMA2000-r3-IEs ::= SEQUENCE {
   -- User equipment IEs
       User equipment IEs
rrc-TransactionIdentifier RRC-TransactionIdentifier,
       activationTime
                                      ActivationTime
                                                                          OPTIONAL.
   -- Radio bearer IEs
       toHandoverRAB-Info
                                      RAB-Info
                                                                          OPTIONAL,
    -- Other IEs
       cdma2000-MessageList
                                     CDMA2000-MessageList
__ ***************
-- HANDOVER FROM UTRAN FAILURE
__ ****************************
{\tt HandoverFromUTRANFailure ::= SEQUENCE } \{
   -- User equipment IEs
       rrc-TransactionIdentifier RRC-TransactionIdentifier,
    -- Other IEs
       interRAT-HO-FailureCause
                                     InterRAT-HO-FailureCause
        -- In case the interRATMessage to be transferred is for GERAN Iu mode, the
        -- message should be placed in the HandoverFromUtranFailure-v590ext-IEs
        -- non-critical extension container.
       interRATMessage
                                      CHOICE {
                                          SEQUENCE {
           gsm
             gsm-MessageList
                                                 GSM-MessageList
           cdma2000
                                              SEQUENCE {
               cdma2000-MessageList
                                                  CDMA2000-MessageList
                       OPTIONAL,
        laterNonCriticalExtensions
                                    SEQUENCE {
           -- Container for additional R99 extensions
           handoverFromUTRANFailure-r3-add-ext BIT STRING OPTIONAL,
           v590NonCriticalExtensions SEQUENCE {
               handoverFromUTRANFailure-v590ext HandoverFromUtranFailure-v590ext-IEs,
                                           SEQUENCE { } OPTIONAL
               nonCriticalExtensions
              OPTIONAL
           OPTIONAL
HandoverFromUtranFailure-v590ext-IEs ::= SEQUENCE {
```

```
geranIu-MessageList
                                         GERANIu-MessageList
                                                                  OPTIONAL
}
__ ***************************
-- INTER RAT HANDOVER INFO
__ *****************************
InterRATHandoverInfo ::= SEQUENCE {
   -- This structure is defined for historical reasons, backward compatibility with 44.018
                                 CHOICE {
   predefinedConfigStatusList
       absent
                                     NULL
                                     PredefinedConfigStatusList
       present
                                 CHOICE {
   uE-SecurityInformation
       absent
                                     NULLI.
       present
                                     UE-SecurityInformation
   ue-CapabilityContainer
                                  CHOICE {
       absent
                                     NULL,
       -- present is an octet aligned string containing IE UE-RadioAccessCapabilityInfo
                                     OCTET STRING (SIZE (0..63))
    -- Non critical extensions
   v390NonCriticalExtensions
                                  CHOICE {
                                    NULL,
       absent
                                     SEQUENCE {
           interRATHandoverInfo-v390ext InterRATHandoverInfo-v390ext-IEs,
                                        SEQUENCE {
           v3a0NonCriticalExtensions
               interRATHandoverInfo-v3a0ext
laterNonCriticalExtensions
InterRATHandoverInfo-v3a0ext-IEs,
SEQUENCE {
                   interRATHandoverInfo-v3d0ext InterRATHandoverInfo-v3d0ext-IEs,
                   -- Container for additional R99 extensions
                   interRATHandoverInfo-r3-add-ext
                                                   BIT STRING
                              (CONTAINING InterRATHandoverInfo-r3-add-ext-IEs)
                   v3g0NonCriticalExtensions SEQUENCE {
                                                  InterRATHandoverInfo-v3g0ext-IEs,
SEQUENCE {
                      interRATHandoverInfo-v3g0ext
                      v4b0NonCriticalExtensions
                          \verb|interRATH| and over \verb|Info-v4b0ext-IEs|, \\
                          v4d0NonCriticalExtensions
                                                        SEQUENCE {
                              interRATHandoverInfo-v4d0ext InterRATHandoverInfo-v4d0ext-IEs,
                              -- Reserved for future non critical extension
                              v590NonCriticalExtensions
                                                           SEQUENCE {
                                  interRATHandoverInfo-v590ext
                                                            InterRATHandoverInfo-v590ext-IEs,
                                  v690NonCriticalExtensions
                                                               SEQUENCE {
                                      interRATHandoverInfo-v690ext
                                                            InterRATHandoverInfo-v690ext-IEs,
                                      interRATHandoverInfo-v6b0ext
                                                            InterRATHandoverInfo-v6b0ext-IEs,
                                         v6e0NonCriticalExtensions
                                                                       SEQUENCE {
                                             interRATHandoverInfo-v6e0ext
                                                            InterRATHandoverInfo-v6e0ext-IEs,
                                             v770NonCriticalExtensions SEQUENCE {
                                                 interRATHandoverInfo-v770ext
                                                            InterRATHandoverInfo-v770ext-IEs,
                                                 v790nonCriticalExtensions
                                                                               SEQUENCE {
                                                     interRATHandoverInfo-v790ext
                                                            InterRATHandoverInfo-v790ext-IEs,
                                                     nonCriticalExtensions SEQUENCE {} OPTIONAL
                                                 OPTIONAL
                                             OPTIONAL
                                         OPTIONAL
                                      OPTIONAL
                                  OPTIONAL
                              OPTIONAL
                          OPTIONAL
                      OPTIONAL
                  ÓPTIONAL
          ) OPTIONAL
      }
InterRATHandoverInfo-v390ext-IEs ::= SEQUENCE {
```

```
-- User equipment IEs
       ue-RadioAccessCapability-v380ext UE-RadioAccessCapability-v380ext dl-PhysChCapabilityFDD-v380ext DL-PhysChCapabilityFDD-v380ext
                                                                                       OPTIONAL,
        dl-PhysChCapabilityFDD-v380ext
}
InterRATHandoverInfo-v3a0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v3a0ext UE-RadioAccessCapability-v3a0ext OPTIONAL
}
InterRATHandoverInfo-v3d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
       uESpecificBehaviourInformationlinterRAT UESpecificBehaviourInformationlinterRAT
    OPTIONAL
}
InterRATHandoverInfo-v3g0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v3g0ext UE-RadioAccessCapability-v3g0ext OPTIONAL
}
InterRATHandoverInfo-r3-add-ext-IEs ::= SEQUENCE {
        interRATHandoverInfo-v7e0ext-IEs,
SEQUENCE {
interRATHandoverInfo-v7f0ext
nonCriticalExtensions
OPTIONAL

InterRATHandoverInfo-v7f0ext-IEs,
SEQUENCE {}
OPTIONAL
            OPTIONAL
}
InterRATHandoverInfo-v4b0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        accessStratumReleaseIndicator
                                           AccessStratumReleaseIndicator
}
InterRATHandoverInfo-v4d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    tdd128-RF-Capability
                                        RadioFrequencyBandTDDList OPTIONAL
}
InterRATHandoverInfo-v590ext-IEs ::= SEQUENCE {
    -- User equipment IEs
                                             PredefinedConfigStatusListComp
        predefinedConfigStatusListComp
                                                                                     OPTIONAL,
        ue-RadioAccessCapabilityComp
                                             UE-RadioAccessCapabilityComp
                                                                                       OPTIONAL
}
InterRATHandoverInfo-v690ext1-IEs ::= SEQUENCE {
   -- User equipment IEs
       ue-RadioAccessCapability-v650ext UE-RadioAccessCapability-v650ext
                                                                                       OPTIONAL
}
InterRATHandoverInfo-v690ext-IEs ::= SEQUENCE {
   -- User equipment IEs
        Jser equipment lEs

ue-SecurityInformation2 UE-SecurityInformation2

ue-RadioAccessCapabilityComp UE-RadioAccessCapabilityComp-ext

ue-RadioAccessCapabilityComp2 UE-RadioAccessCapabilityComp2
                                                                                       OPTIONAL.
                                                                                       OPTIONAL,
}
InterRATHandoverInfo-v6b0ext-IEs ::= SEQUENCE {
   -- User equipment IEs
                                              ENUMERATED { true }
       supportForSIB11bis
}
InterRATHandoverInfo-v6e0ext-IEs ::= SEQUENCE {
   -- User equipment IEs
       supportForFDPCH
                                             ENUMERATED { true }
                                                                         OPTIONAL
}
InterRATHandoverInfo-v770ext-IEs ::= SEQUENCE {
       ue-RadioAccessCapabilityInfoUE-RadioAccessCapabilityInfo-v770extue-RadioAccessCapabilityCompUE-RadioAccessCapabilityComp-v770ext
                                                                                       OPTIONAL,
                                                                                       OPTIONAL,
        ue-RadioAccessCapabilityComp2 UE-RadioAccessCapabilityComp2-v770ext
                                                                                       OPTIONAL
}
InterRATHandoverInfo-v790ext-IEs ::= SEQUENCE {
    -- User equipment IEs
```

```
ENUMERATED { true }
       supportForEDPCCHPowerBoosting
                                                                                 OPTIONAL
}
InterRATHandoverInfo-v7e0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability
                                       UE-RadioAccessCapability-v7e0ext
                                                                               OPTIONAL
}
InterRATHandoverInfo-v7f0ext-IEs ::=
                                    SEQUENCE {
   -- User equipment IEs
       ue-RadioAccessCapability UE-RadioAccessCapability-v7f0ext OPTIONAL,
ue-RadioAccessCapabilityComp2 UE-RadioAccessCapabilityComp2-v7f0ext OPTIONAL
      ue-RadioAccessCapability
                                                                               OPTIONAL.
}
__ ***************
-- MEASUREMENT CONTROL
__ *****************
MeasurementControl ::= CHOICE {
   -- The Rel-4 functionality of UE Positioning OTDOA AssistanceData TDD is only available
   -- in the later-than-r3 branch of this message (i.e. through the use of the IE
   -- ue-Positioning-OTDOA-AssistanceData-r4)
                              SEQUENCE {
   r3
       measurementControl-v390ext MeasurementControl-v390ext,
v3a0NonCriticalExtensions SEQUENCE {
   measurementControl-v3a0ext MeasurementControl-v3a0ext,
   laterNonCriticalExtensions SEQUENCE {
                   -- Container for additional R99 extensions
                   -- The content of the v4b0 non-critical extension has been removed. If sent
                      -- to a UE of AS release 4, the UE behaviour is unspecified. A UE of AS
                      -- release 5 onward shall comply with the v4b0 and later extensions in this
                       -- branch of the message.
                                                  SEQUENCE {
                      v590NonCriticalExtensions
                          SEQUENCE {
                              measurementControl-v5b0ext MeasurementControl-v5b0ext-IEs,
                                                            SEQUENCE {}
                              nonCriticalExtensions
                                                                         OPTIONAL
                                                OPTIONAL
                      }
                                             OPTIONAL
                  }
                                         OPTIONAL
              }
                                     OPTIONAL
          }
                                 OPTIONAL
       }
                              OPTIONAL
                                  SEQUENCE {
    later-than-r3
       rrc-TransactionIdentifier RRC-TransactionIdentifier,
       criticalExtensions
                                     CHOICE {
               -- Container for adding non critical extensions after freezing REL-5 \,
                   measurementControl-r4-add-ext BIT STRING OPTIONAL,
                      ONOnCriticalExtensions SEQUENCE {
measurementControl-v590ext MeasurementControl-v590ext-IEs,
v5b0NonCriticalExtensions SEQUENCE {
                   v590NonCriticalExtensions
                          measurementControl-v5b0ext MeasurementControl-v5b0ext-IEs,
                                                        SEQUENCE {} OPTIONAL
                          nonCriticalExtensions
                          OPTIONAL
                      OPTIONAL
                 OPTIONAL
                                         SEQUENCE {
           later-than-r4
               -- Most significant part of "RRC transaction identifier" (MSP),
               -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP * 4 +
               -- rrc-TransactionIdentifier
               rrc-TransactionIdentifier-MSP
                                                RRC-TransactionIdentifier.
                                         CHOICE {
               criticalExtensions
                      measurementControl-r6

y6a0NorCriti
                      weasurementControl-r6-IEs, V6a0NonCriticalExtensions

measurement

SEQUENCE (
                          measurementControl-v6a0ext MeasurementControl-v6a0ext-IEs,
                          nonCriticalExtensions
                                                        SEQUENCE {} OPTIONAL
```

```
} OPTIONAL
                     criticalExtensions
                                                     CHOICE {
                             measurementControl-r7

— Contain
                                                              MeasurementControl-r7-IEs,
                              -- Container for adding non critical extensions after freezing REL-7
                             measurementControl-r7-add-ext BIT STRING OPTIONAL,
v7b0NonCriticalExtensions SEQUENCE {
   measurementControl-v7b0ext MeasurementControl-v7b0ext-IEs,
   nonCriticalExtensions SEQUENCE {} OPTIONAL.
                                  nonCriticalExtensions
                                                                    SEQUENCE {} OPTIONAL
                               OPTIONAL
                         }.
                         criticalExtensions SEQUENCE {}
                     }
           }
        }
    }
}
MeasurementControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
    -- Measurement IEs
        measurementIdentity MeasurementIdentity,
        -- TABULAR: The measurement type is included in MeasurementCommand.
        measurementCommand MeasurementCommand,
measurementReportingMode MeasurementReportingMode AdditionalMeasurementID-List
                                                                                OPTIONAL,
                                                                                OPTIONAL.
    -- Physical channel IEs
        dpch-CompressedModeStatusInfo DPCH-CompressedModeStatusInfo
                                                                                OPTIONAL
}
MeasurementControl-v390ext ::= SEQUENCE {
        ue-Positioning-Measurement-v390ext UE-Positioning-Measurement-v390ext OPTIONAL
}
{\tt MeasurementControl-v3a0ext} \ ::= \ {\tt SEQUENCE} \ \big\{
    sfn-Offset-Validity
                            SFN-Offset-Validity OPTIONAL
}
MeasurementControl-r4-IEs ::= SEQUENCE {
    -- Measurement IEs
        measurementIdentity MeasurementIdentity,
        -- TABULAR: The measurement type is included in measurementCommand.
        measurementCommand MeasurementCommand-r4,
measurementReportingMode MeasurementReportingMode
additionalMeasurementList AdditionalMeasurementID-List
                                                                                OPTIONAL.
                                                                               OPTIONAL,
    -- Physical channel IEs
        dpch-CompressedModeStatusInfo DPCH-CompressedModeStatusInfo
                                                                               OPTIONAL
}
MeasurementControl-v590ext-IEs ::= SEQUENCE {
    measurementCommand-v590ext
                                        CHOICE {
        -- the choice "intra-frequency" shall be used for the case of intra-frequency measurement,
        -- as well as when intra-frequency events are configured for inter-frequency measurement
        intra-frequency
                                              Intra-FreqEventCriteriaList-v590ext,
        inter-frequency
                                              Inter-FreqEventCriteriaList-v590ext
    -- most significant part of "RRC transaction identifier" (MSP),
    -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v590ext * 4 +
    -- rrc-TransactionIdentifier
    rrc-TransactionIdentifier-MSP-v590ext RRC-TransactionIdentifier
}
{\tt MeasurementControl-v5b0ext-IEs} \ ::= \ {\tt SEQUENCE} \ \{
                                     InterRATCellInfoIndication
    interRATCellInfoIndication
                                                                               OPTIONAL
MeasurementControl-r6-IEs ::= SEQUENCE {
    -- Measurement IEs
        measurementIdentity
                                        MeasurementIdentity,
         -- TABULAR: The measurement type is included in measurementCommand.
        measurementCommand MeasurementCommand-r6,
measurementReportingMode
additionalMeasurementList AdditionalMeasurementID
                                                                                OPTIONAL.
                                         MeasurementReportingMode
                                         AdditionalMeasurementID-List
                                                                                OPTIONAL.
```

```
-- Physical channel IEs
       dpch-CompressedModeStatusInfo DPCH-CompressedModeStatusInfo OPTIONAL
}
MeasurementControl-v6a0ext-IEs ::= SEQUENCE {
   intraFreqReportingCriteria-1b-r5 IntraFreqReportingCriteria-1b-r5 OPTIONAL
MeasurementControl-r7-IEs ::= SEQUENCE {
   -- Measurement IEs
        Measurement IEs
measurementIdentity
MeasurementIdentity,
        -- TABULAR: The measurement type is included in measurementCommand.
       measurementCommand MeasurementCommand-r7,
measurementReportingMode
additionalMeasurementList AdditionalMeasurementI
                                        MeasurementReportingMode
                                                                              OPTIONAL,
                                        AdditionalMeasurementID-List
                                                                             OPTIONAL,
    -- Physical channel IEs
        dpch-CompressedModeStatusInfo DPCH-CompressedModeStatusInfo
                                                                             OPTIONAL
}
{\tt MeasurementControl-v7b0ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
    -- Measurement IEs
                                       NewInterFreqCellList-v7b0ext OPTIONAL
       newInterFreqCellList
}
__ ***************
-- MEASUREMENT CONTROL FAILURE
__ *****************
MeasurementControlFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier
        rrc-TransactionIdentifier
failureCause
laterNonCriticalExtensions
RRC-TransactionIdentifier,
FailureCauseWithProtErr,
SEQUENCE {
            -- Container for additional R99 extensions
            measurementControlFailure-r3-add-ext
                                                         BIT STRING OPTIONAL,
                \verb"nonCriticalExtensions" & \verb"SEQUENCE" {} \\
                OPTIONAL
           OPTIONAL
}
MeasurementControlFailure-v590ext-IEs ::= SEQUENCE {
   -- most significant part of "RRC transaction identifier" (MSP),
    -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v590ext * 4 +
    -- rrc-TransactionIdentifier
    -- If the rrc-TransactionIdentifier-MSP-v590ext was not received in the MEASUREMENT CONTROL
    -- message, then the rrc-TransactionIdentifier-MSP-v590ext shall be set to zero
    rrc-TransactionIdentifier-MSP-v590ext RRC-TransactionIdentifier
}
__ ***************
-- MEASUREMENT REPORT
__ ****************
MeasurementReport ::= SEQUENCE {
   -- Measurement IEs
       measurementIdentity MeasurementIdentity,
       measuredResults MeasuredResults MeasuredResults additional MeasuredResults
                                                                              OPTIONAL,
                                        MeasuredResultsOnRACH
                                                                              OPTIONAL.
        measuredResultsOnRACH MeasuredResultsOnRACH additionalMeasuredResults MeasuredResultsList
                                                                              OPTIONAL,
                                                                               OPTIONAL,
        eventResults
                                         EventResults
    -- Non-critical extensions
            OnonCriticalExtensions SEQUENCE {
measurementReport-v390ext MeasurementReport-v390ext,
laterNonCriticalExtensions SEQUENCE {
        v390nonCriticalExtensions
                -- Container for additional R99 extensions
                measurementReport-r3-add-ext
v4b0NonCriticalExtensions
measurementReport-v4b0ext

MeasurementReport-v4b0ext

BIT STRING OPTIONAL,
SEQUENCE {
    MeasurementReport-v4b0ext-IEs,
                     -- Extension mechanism for non-Rel4 information
                    v590NonCriticalExtensions SEQUENCE {
                                                        MeasurementReport-v590ext-IEs,
                        measurementReport-v590ext
```

```
v5b0NonCriticalExtensions
                                                    MeasurementReport-v5b0ext MeasurementReport-v5b0ext-IEs, v690NonCriticalExtensions
                                                                                                      SEQUENCE {
                                                           measurementParameters are sequence {

"The sequence of the seq
                                                                 measurementReport-v770ext MeasurementReport-v770ext-IEs, nonCriticalExtensions SEQUENCE {} OPTION
                                                                                                                                                                          OPTIONAL
                                                                         OPTIONAL
                                                                  OPTIONAL
                                                            OPTIONAL
                                                    OPTIONAL
                                             OPTIONAL
                                     OPTIONAL.
                              OPTIONAL
}
MeasurementReport-v390ext ::= SEQUENCE {
               measuredResults-v390ext
                                                                           MeasuredResults-v390ext
                                                                                                                                            OPTIONAL
\label{eq:measurementReport-v4b0ext-IEs} \ ::= \ \mathtt{SEQUENCE} \ \big\{
       interFreqEventResults-LCR InterFreqEventResults-LCR-r4-ext OPTIONAL,
       -- additionalMeasuredResults-LCR shall contain measurement results and additional measurement
       -- results list.
       additionalMeasuredResults-LCR MeasuredResultsList-LCR-r4-ext
                                                                                                                                             OPTIONAL.
       -- dummy is not used in this version of the specification. It should not be sent and
       -- if received it should be ignored.
       dummy
                                                                   PrimaryCPICH-Info
                                                                                                                                               OPTIONAL
}
MeasurementReport-v590ext-IEs ::= SEQUENCE {
       measuredResults-v590ext
                                                                MeasuredResults-v590ext
MeasurementReport-v5b0ext-IEs ::= SEQUENCE {
       interRATCellInfoIndication
                                                            InterRATCellInfoIndication
                                                                                                                                             OPTIONAL
MeasurementReport-v690ext-IEs ::= SEQUENCE {
       measuredResultsOnRACHinterFreq MeasuredResultsOnRACHinterFreq
{\tt MeasurementReport-v770ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
       measuredResults
                                                                           MeasuredResults-v770ext
                                                                                                                                               OPTIONAL,
       additionalMeasuredResults
                                                                           MeasuredResultsList-v770xet
                                                                                                                                               OPTIONAL,
       eventResults
                                                                          EventResults-v770ext
                                                                                                                                              OPTIONAL,
       ue-Positioning-OTDOA-MeasuredResults
                                                                           UE-Positioning-OTDOA-MeasuredResultsTDD-ext
                                                                                                                                                                    OPTIONAL
__ ****************
-- PAGING TYPE 1
__ *****************
PagingType1 ::= SEQUENCE {
       -- User equipment IEs
              pagingRecordList
                                                                        PagingRecordList
                                                                                                                                              OPTIONAL,
       -- Other TEs
              bcch-ModificationInfo
               bcch-ModificationInfo BCCH-ModificationInfo laterNonCriticalExtensions SEQUENCE {
                                                                                                                                             OPTIONAL,
                      -- Container for additional R99 extensions
                      pagingType1-r3-add-ext BIT STRING
v590NonCriticalExtensions SEOUENCE {
                                                                                                            OPTIONAL.
                                                                                  SEQUENCE {
                      v590NonCriticalExtensions
                             pagingType1-v590ext
                                                                                  PagingType1-v590ext-IEs,
                              nonCriticalExtensions
                                                                                         SEQUENCE {} OPTIONAL
                             OPTIONAL
               } OPTIONAL
}
PagingType1-v590ext-IEs ::= SEQUENCE {
      -- User equipment IEs
              pagingRecord2List
                                                                           PagingRecord2List-r5
                                                                                                                                           OPTIONAL
}
__ ******************
```

```
-- PAGING TYPE 2
__ ***************
PagingType2 ::= SEQUENCE {
   -- User equipment IEs
       rrc-TransactionIdentifier RRC-TransactionIdentifier,
       pagingCause
                                    PagingCause,
   -- Core network IEs
       cn-DomainIdentity
                                    CN-DomainIdentity,
       pagingRecordTypeID PagingRecordTypeID,
laterNonCriticalExtensions SEQUENCE {
       pagingRecordTypeID
           -- Container for additional R99 extensions
          pagingType2-r3-add-ext BIT STRING
                                                       OPTIONAL,
           nonCriticalExtensions
                                        SEQUENCE {}
          OPTIONAL
}
  ***************
-- PHYSICAL CHANNEL RECONFIGURATION
__ ***************
PhysicalChannelReconfiguration ::= CHOICE {
                                 SEQUENCE {
       physicalChannelReconfiguration-r3
                                    PhysicalChannelReconfiguration-r3-IEs,
                                        SEQUENCE {
       v3a0NonCriticalExtensions
           physicalChannelReconfiguration-v3a0ext
                                                   PhysicalChannelReconfiguration-v3a0ext,
           -- Container for additional R99 extensions
              physicalChannelReconfiguration-r3-add-ext
                                                              BIT STRING
                                                                             OPTIONAL,
                                              SEQUENCE {
              v4b0NonCriticalExtenstions
                  {\tt physicalChannelReconfiguration-v4b0ext}
                                          PhysicalChannelReconfiguration-v4b0ext-IEs,
                                                  SEQUENCE {
                  v590NonCriticalExtenstions
                      physicalChannelReconfiguration-v590ext
                                               PhysicalChannelReconfiguration-v590ext-IEs,
                      v690NonCriticalExtensions
                                                   SEQUENCE {
                          physicalChannelReconfiguration-v690ext
                                                 PhysicalChannelReconfiguration-v690ext-IEs,
                          v770NonCriticalExtensions
                                                       SEQUENCE {
                             physicalChannelReconfiguration-v770ext
                                                   PhysicalChannelReconfiguration-v770ext-IEs,
                             nonCriticalExtensions
                                                                   SEQUENCE {} OPTIONAL
                             OPTIONAL
                         OPTIONAL
                      OPTIONAL
                  OPTIONAL
              OPTIONAL
       } OPTIONAL
                                 SEQUENCE {
   later-than-r3
       rrc-TransactionIdentifier
                                    RRC-TransactionIdentifier,
                                        CHOICE {
          criticalExtensions
                                         SEQUENCE {
              physicalChannelReconfiguration-r4
                                           PhysicalChannelReconfiguration-r4-IEs,
              v4d0NonCriticalExtensions
                                               SEQUENCE {
                   -- Container for adding non critical extensions after freezing REL-5
                  physicalChannelReconfiguration-r4-add-ext
                                                              BIT STRING OPTIONAL,
                                                  SEQUENCE {
                  v590NonCriticalExtenstions
                      physicalChannelReconfiguration-v590ext
                                            PhysicalChannelReconfiguration-v590ext-IEs,
                      v690NonCriticalExtensions SEQUENCE {
                          physicalChannelReconfiguration-v690ext
                                                  PhysicalChannelReconfiguration-v690ext-IEs,
                          v770NonCriticalExtensions
                                                       SEQUENCE {
                             physicalChannelReconfiguration-v770ext
                                                   PhysicalChannelReconfiguration-v770ext-IEs,
                                                           SEQUENCE {}
                                                                          OPTIONAL
                             nonCriticalExtensions
                             OPTIONAL
                          OPTIONAL
                      OPTIONAL
                  OPTIONAL
           criticalExtensions
                                        CHOICE {
```

r5

SEQUENCE {

```
physicalChannelReconfiguration-r5
                                                   PhysicalChannelReconfiguration-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                                                               BIT STRING
                   physicalChannelReconfiguration-r5-add-ext
                                                                                   OPTIONAL.
                    v690NonCriticalExtensions
                                              SEQUENCE {
                       physicalChannelReconfiguration-v690ext
                                                       PhysicalChannelReconfiguration-v690ext-IEs,
                       v770NonCriticalExtensions
                                                       SEQUENCE {
                           physicalChannelReconfiguration-v770ext
                                                     PhysicalChannelReconfiguration-v770ext-IEs,
                                                           SEQUENCE {}
                                                                          OPTIONAL
                           nonCriticalExtensions
                           OPTIONAL.
                   }
                       OPTIONAL
                                               CHOICE {
               criticalExtensions
                   r6
                                                   SEQUENCE {
                       physicalChannelReconfiguration-r6
                                                       PhysicalChannelReconfiguration-r6-IEs,
                        -- Container for adding non critical extensions after freezing REL-7
                       physicalChannelReconfiguration-r6-add-ext
                                                                   BIT STRING
                                                                                     OPTIONAL.
                                                       SEQUENCE {
                       v6b0NonCriticalExtensions
                           physicalChannelReconfiguration-v6b0ext
                                                       PhysicalChannelReconfiguration-v6b0ext-IEs,
                                                          SEQUENCE {
                           v770NonCriticalExtensions
                               physicalChannelReconfiguration-v770ext
                                                      PhysicalChannelReconfiguration-v770ext-IEs,
                               nonCriticalExtensions
                                                               SEQUENCE {}
                                                                              OPTIONAL
                               OPTIONAL
                           OPTIONAL
                       }
                   criticalExtensions
                                                   CHOICE {
                                                       SEQUENCE {
                           physicalChannelReconfiguration-r7
                                                      PhysicalChannelReconfiguration-r7-IEs,
                            -- Container for adding non critical extensions after freezing REL-8
                           physicalChannelReconfiguration-r7-add-ext BIT STRING OPTIONAL,
                           v780NonCriticalExtensions
                                                       SEQUENCE {
                               physicalChannelReconfiguration-v780ext
                                                       PhysicalChannelReconfiguration-v780ext-IEs,
                               v7d0NonCriticalExtensions
                                                              SEQUENCE {
                                   physicalChannelReconfiguration-v7d0ext
                                                       PhysicalChannelReconfiguration-v7d0ext-IEs,
                                   v7f0NonCriticalExtensions
                                                                  SEQUENCE {
                                       physicalChannelReconfiguration-v7f0ext
                                                       PhysicalChannelReconfiguration-v7f0ext-IEs,
                                       v7q0NonCriticalExtensions
                                                                      SEQUENCE {
                                           physicalChannelReconfiguration-v7g0ext
                                                       PhysicalChannelReconfiguration-v7g0ext-IEs,
                                           nonCriticalExtensions
                                                                          SEQUENCE {}
                                           OPTIONAL
                                       OPTIONAL
                                   OPTIONAL
                               OPTIONAL
                       },
                       criticalExtensions
                                                      SEQUENCE {}
                  }
      }
   }
PhysicalChannelReconfiguration-r3-IEs ::= SEQUENCE {
   -- User equipment IEs
       rrc-TransactionIdentifier
                                     RRC-TransactionIdentifier,
                                       IntegrityProtectionModeInfo
        integrityProtectionModeInfo
                                                                           OPTIONAL,
       cipheringModeInfo
                                       CipheringModeInfo
                                                                           OPTIONAL,
                                       ActivationTime
                                                                           OPTIONAL.
       activationTime
       new-U-RNTI
                                       U-RNTI
                                                                           OPTIONAL.
       new-C-RNTI
                                       C-RNTI
                                                                           OPTIONAL,
       rrc-StateIndicator
                                       RRC-StateIndicator,
       utran-DRX-CycleLengthCoeff
                                      UTRAN-DRX-CycleLengthCoefficient
                                                                          OPTIONAL,
    -- Core network IEs
       cn-InformationInfo
                                       CN-InformationInfo
                                                                           OPTIONAL,
    -- UTRAN mobility IEs
       ura-Identity
                                      URA-Identity
                                                                           OPTIONAL.
    -- Radio bearer IEs
```

```
dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo
                                                                            OPTIONAL,
       frequencyInfo FrequencyInfo
maxAllowedUL-TX-Power
-- Note: the Table 1
    -- Physical channel IEs
                                                                             OPTIONAL,
                                        MaxAllowedUL-TX-Power
                                                                             OPTIONAL,
        -- Note: the reference to CPCH in the element name below is incorrect. The name is not
        -- changed to keep it aligned with R99.
        ul-ChannelRequirement

UL-ChannelRequirementWithCPCH-SetID

modeSpecificInfo

CHOICE {

SPOURNCE {
            fdd
                                            SEQUENCE {
                -- dummy is not used in this version of specification, it should
                -- not be sent and if received it should be ignored.
                                                 DL-PDSCH-Information
                                                                            OPTIONAL
            },
            tdd
                                             NULL
       dl-CommonInformation
dl-InformationPerRL-List
DL-InformationPerRL-List
        dl-CommonInformation
                                                                             OPTIONAL
}
PhysicalChannelReconfiguration-v3a0ext ::= SEQUENCE {
   -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received the UE behaviour
    -- is unspecified
   new-DSCH-RNTI
                                    DSCH-RNTI
                                                                         OPTIONAL
PhysicalChannelReconfiguration-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- dummy is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored.
                                             SSDT-UL
        dummy
                                                                                 OPTIONAL.
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
        cell-id-PerRL-List
                                             CellIdentity-PerRL-List
                                                                                OPTIONAL
}
PhysicalChannelReconfiguration-v590ext-IEs ::= SEQUENCE {
   -- Physical channel IEs
       dl-TPC-PowerOffsetPerRL-List DL-TPC-PowerOffsetPerRL-List OPTIONAL
PhysicalChannelReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo IntegrityProtectionModeInfo
                                                                              OPTIONAL.
        cipheringModeInfo
                                         CipheringModeInfo
                                                                              OPTIONAL,
        activationTime
                                         ActivationTime
                                                                              OPTIONAL,
        new-U-RNTI
                                         U-RNTI
                                                                              OPTIONAL.
       new-C-RNTI
                                        C-RNTI
                                                                              OPTIONAL.
        -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
        -- the UE behaviour is unspecified
                             DSCH-RNTI
        new-DSCH-RNTI
       rrc-StateIndicator RRC-StateIndicator, utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
        cn-InformationInfo
                                        CN-InformationInfo
    -- UTRAN mobility IEs
       ura-Identity
                                        URA-Identity
                                                                              OPTIONAL.
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo
    dl-Councersymon.

-- Physical channel IEs
frequencyInfo
FrequencyInfo
MaxAllowedUL-T
                                                                              OPTIONAL.
                                        MaxAllowedUL-TX-Power
                                                                              OPTIONAL,
        -- Note: the reference to CPCH in the element name below is incorrect. The name is not
        -- changed to keep it aligned with R99.
       ul-ChannelRequirement UL-ChannelRequirementWithCPCH-SetID-r4 OPTIONAL, modeSpecificInfo CHOICE {
            fdd
                                            SEQUENCE {
                -- dummy is not used in this version of specification, it should
                -- not be sent and if received it should be ignored.
                dummy
                                                 DL-PDSCH-Information
                                                                            OPTIONAL
            },
            tdd
                                             NULL
        dl-CommonInformation
        dl-CommonInformation DL-CommonInformation-r4
dl-InformationPerRL-List DL-InformationPerRL-List-r4
                                                                             OPTIONAL,
                                                                            OPTIONAL
}
PhysicalChannelReconfiguration-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
```

```
integrityProtectionModeInfo
                                      IntegrityProtectionModeInfo
                                                                           OPTIONAL,
        cipheringModeInfo
                                       CipheringModeInfo
                                                                           OPTIONAL,
        activationTime
                                       ActivationTime
                                                                           OPTIONAL,
        new-II-RNTT
                                       IJ-RNTT
                                                                           OPTIONAL,
       new-C-RNTI
                                       C-RNTI
                                                                           OPTIONAL.
        -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
        -- the UE behaviour is unspecified
                                       DSCH-RNTI
       new-DSCH-RNTI
                                                                           OPTIONAL.
                                      H-RNTI
        new-H-RNTI
                                                                           OPTIONAL,
        rrc-StateIndicator
                                       RRC-StateIndicator,
       utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient
                                                                          OPTIONAL,
    -- Core network IEs
       cn-InformationInfo
                                      CN-InformationInfo
                                                                           OPTIONAL,
    -- UTRAN mobility IEs
       ura-Identity
                                      URA-Identity
                                                                           OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5
                                                                         OPTIONAL,
    -- Physical channel IEs
       frequencyInfo
                                      FrequencyInfo
                                       MaxAllowedUL-TX-Power
        maxAllowedUL-TX-Power
                                                                           OPTIONAL,
        -- Note: the reference to CPCH in the element name below is incorrect. The name is not
        -- changed to keep it aligned with R99.
       ul-ChannelRequirement
                                      UL-ChannelRequirementWithCPCH-SetID-r5 OPTIONAL,
        modeSpecificInfo
                                      CHOICE {
                                          SEQUENCE {
               -- dummy is not used in this version of specification, it should
                -- not be sent and if received it should be ignored.
                                              DL-PDSCH-Information
           },
                                           NULL
           tdd
        dl-HSPDSCH-Information
                                    DL-HSPDSCH-Information
        dl-CommonInformation
                                      DL-CommonInformation-r5
                                                                          OPTIONAL,
       dl-CommonInformation DL-CommonInformation-r5
dl-InformationPerRL-List DL-InformationPerRL-List-r5
                                                                          OPTIONAL
}
PhysicalChannelReconfiguration-r6-IEs ::= SEQUENCE {
    -- User equipment IEs
        OPTIONAL,
        cipheringModeInfo
                                      CipheringModeInfo
                                                                          OPTIONAL,
        activationTime
                                       ActivationTime
                                                                           OPTIONAL,
                                      DelayRestrictionFlag
       delayRestrictionFlag
                                                                          OPTIONAL.
       new-U-RNTI
                                      U-RNTI
                                                                           OPTIONAL,
        new-C-RNTI
                                       C-RNTI
                                                                           OPTIONAL,
        -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
        -- and if received the UE behaviour is unspecified
       new-DSCH-RNTI
                                      DSCH-RNTI
                                                                           OPTIONAL.
       new-H-RNTI
newPrimary-E-RNTI
newSecondary-E-RNTI
rrc-StateIndicator
RRC-StateIndicator,
UTRAN-DRX-CycleLengthCoefficient
       new-H-RNTI
                                      H-RNTT
                                                                           OPTIONAL,
                                                                           OPTIONAL,
                                                                          OPTIONAL,
                                                                          OPTIONAL,
    -- Core network IEs
       cn-InformationInfo
                                      CN-InformationInfo-r6
                                                                           OPTIONAL.
    -- UTRAN mobility IEs
       ura-Identity
                                      URA-Identity
                                                                           OPTIONAL.
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5
                                                                          OPTIONAL,
    -- Physical channel IEs
       frequencyInfo
                                      FrequencyInfo
                                                                           OPTIONAL.
                                     MaxAllowedUL-TX-Power
        maxAllowedUL-TX-Power
                                                                           OPTIONAL,
        ul-DPCH-Info
                                      UL-DPCH-Info-r6
                                                                           OPTIONAL,
                                     UL-EDCH-Information-r6
       ul-EDCH-Information
                                                                          OPTIONAL,
       dl-HSPDSCH-Information
                                      DL-HSPDSCH-Information-r6
                                     DL-HSPDSCH-INIO......DL-CommonInformation-r6
                                                                          OPTIONAL,
       dl-CommonInformation
                                                                           OPTIONAL.
       dl-InformationPerRL-List
                                     DL-InformationPerRL-List-r6
                                                                          OPTIONAL,
    -- MBMS IEs
       mbms-PL-ServiceRestrictInfo
                                      MBMS-PL-ServiceRestrictInfo-r6
                                                                          OPTIONAL
}
PhysicalChannelReconfiguration-v690ext-IEs ::= SEQUENCE {
    -- User Equipment IEs
       delayRestrictionFlag
                                     DelayRestrictionFlag
                                                                           OPTIONAL,
    -- Core network IEs
       primary-plmn-Identity
                                     PLMN-Identity
                                                                           OPTIONAL,
    -- Physical channel IEs
       -- The IE harq-Preamble-Mode should not be used in the r3 and r4 versions of the message
        -- If included in the r3 or r4 version of the message, the UE should ignore the IE
```

```
harq-Preamble-Mode
                                                                         HARQ-Preamble-Mode
                                                                                                                                              OPTIONAL,
                                                                          BEACON-PL-Est
              beaconPLEst
                                                                                                                                              OPTIONAL,
                                                                         ENUMERATED { true }
              postVerificationPeriod
                                                                                                                                             OPTIONAL,
                                                                          DHS-Sync
                                                                                                                                              OPTIONAL,
               dhs-svnc
               timingMaintainedSynchInd
                                                                          TimingMaintainedSynchInd
                                                                                                                                              OPTIONAL.
              mbms-PL-ServiceRestrictInfo MBMS-PL-ServiceRestrictInfo-r6
                                                                                                                                           OPTIONAL
}
PhysicalChannelReconfiguration-v6b0ext-IEs ::= SEQUENCE {
       -- Physical channel IEs
              dl-InformationPerRL-List-v6b0ext DL-InformationPerRL-List-v6b0ext OPTIONAL
}
PhysicalChannelReconfiguration-r7-IEs ::= SEQUENCE {
       -- User equipment IEs
              OPTIONAL,
              integrityriotectics
cipheringModeInfo
CipheringmodeInfo
ActivationTime
                                                                                                                                             OPTIONAL,
              delayRestrictionFlag
                                                                          DelayRestrictionFlag
                                                                                                                                             OPTIONAL,
              new-U-RNTI
                                                                         U-RNTI
                                                                                                                                              OPTIONAL,
               new-C-RNTI
                                                                          C-RNTI
                                                                                                                                              OPTIONAL,
               -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
               -- and if received the UE behaviour is unspecified
               new-DSCH-RNTT
                                                                         DSCH-RNTT
                                                                                                                                              OPTIONAL.
              new-H-RNTI
                                                                         H-RNTT
                                                                                                                                              OPTIONAL,
              newPrimary-E-RNTI E-RNTI OPTIONAL,
newSecondary-E-RNTI E-RNTI OPTIONAL,
rrc-StateIndicator RRC-StateIndicator,
ueMobilityStateIndicator High-MobilityDetected OPTIONAL,
utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient-r7 OPTIONAL,
Core network IEs
       -- Core network IEs
              cn-InformationInfo
                                                                         CN-InformationInfo-r6
                                                                                                                                              OPTIONAL,
       -- UTRAN mobility IEs
                                                                         URA-Identity
                                                                                                                                              OPTIONAL,
               ura-Identity
               supportForChangeOfUE-Capability BOOLEAN
                                                                                                                                              OPTIONAL,
              responseToChangeOfUE-Capability ENUMERATED { true }
                                                                                                                                              OPTIONAL,
       -- Radio bearer IEs
               dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
       -- Physical channel IEs
              frequencyInfo
                                                                          FrequencyInfo
              multi-frequencyInfo Multi-frequencyInfo-LCR-r7
dtx-drx-TimingInfo DTX-DRX-TimingInfo-r7
dtx-drx-Info DTX-DRX-Info-r7
                                                                                                                                             OPTIONAL,
                                                                                                                                             OPTIONAL,
                                                                                                                                             OPTIONAL,
              dtx-drx-Info

hs-scch-LessInfo

mimoParameters

maxAllowedUL-TX-Power

ul-DPCH-Info

ul-EDCH-Information

dl-HSPDSCH-Information

dl-CommonInformation

dl-InformationPerRL-List

DTX-DRX-Info-r7

MIMO-Parameters-r7

MIMO-Parame
                                                                                                                                             OPTIONAL,
                                                                                                                                             OPTIONAL,
                                                                                                                                             OPTIONAL.
                                                                                                                                             OPTIONAL,
                                                                                                                                             OPTIONAL,
                                                                                                                                             OPTIONAL,
                                                                                                                                             OPTIONAL,
       -- MBMS IEs
              mbms-PL-ServiceRestrictInfo MBMS-PL-ServiceRestrictInfo-r6
}
PhysicalChannelReconfiguration-v770ext-IEs ::= SEQUENCE {
       -- User equipment IEs
              ueMobilityStateIndicator High-MobilityDetected
                                                                                                                                              OPTIONAL
}
PhysicalChannelReconfiguration-v780ext-IEs ::= SEQUENCE {
      -- Physical channel IEs
              harqInfo
                                                                          HARQ-Info-r7
                                                                                                                                              OPTIONAL,
              hs-DSCH-TBSizeTable
                                                                          HS-DSCH-TBSizeTable
                                                                                                                                              OPTIONAL
}
PhysicalChannelReconfiguration-v7d0ext-IEs ::= SEQUENCE {
       -- Physical channel IEs
UL-EDCH-Information-ext
                                                                                                                                             OPTIONAL
}
PhysicalChannelReconfiguration-v7f0ext-IEs ::= SEQUENCE {
       -- Physical channel IEs
                                                                         MIMO-Parameters-v7f0ext
              mimoParameters
                                                                                                                                            OPTIONAL
PhysicalChannelReconfiguration-v7g0ext-IEs ::= SEQUENCE {
```

```
-- Physical channel IEs
       mimoParameters
                                      MIMO-Parameters-v7q0ext
                                                                        OPTIONAL
}
__ ****************
-- PHYSICAL CHANNEL RECONFIGURATION COMPLETE
__ ***************
PhysicalChannelReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
       rrc-TransactionIdentifier RRC-TransactionIdentifier, ul-IntegProtActivationInfo IntegrityProtActivationInfo
                                                                        OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
       ul-TimingAdvance
                              UL-TimingAdvance
                                                                         OPTIONAL,
    -- Radio bearer IEs
                                 ActivationTime
       count-C-ActivationTime
                                                                         OPTIONAL,
        -- dummy is not used in this version of the specification and
        -- it should be ignored by the receiver.
                                     RB-ActivationTimeInfoList
                                                                        OPTIONAL,
       dummy
       ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo OPTIONAL, laterNonCriticalExtensions SEQUENCE {
           -- Container for additional R99 extensions
           physicalChannelReconfigurationComplete-r3-add-ext BIT STRING OPTIONAL,
           v770NonCriticalExtensions SEQUENCE {
               physicalChannelReconfigurationComplete-v770ext
                                PhysicalChannelReconfigurationComplete-v770ext-IEs,
                                          SEQUENCE {} OPTIONAL
               nonCriticalExtensions
              OPTIONAL
           OPTIONAL
PhysicalChannelReconfigurationComplete-v770ext-IEs ::= SEQUENCE {
       -- TABULAR: EXT-UL-TimingAdvance is applicable for TDD mode only.
       ext-UL-TimingAdvance EXT-UL-TimingAdvance OPTIONAL, deferredMeasurementControlReading ENUMERATED { true }
}
__ *******************************
-- PHYSICAL CHANNEL RECONFIGURATION FAILURE
__ ****************
PhysicalChannelReconfigurationFailure ::= SEQUENCE {
   -- User equipment IEs
       rrc-TransactionIdentifier RRC-TransactionIdentifier OPTIONAL, failureCause FailureCauseWithProtErr, laterNonCriticalExtensions SEQUENCE {
           -- Container for additional R99 extensions
           physicalChannelReconfigurationFailure-r3-add-ext BIT STRING OPTIONAL,
                                   SEQUENCE {} OPTIONAL
           nonCriticalExtensions
       } OPTIONAL
}
__ ****************
-- PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)
__ ***************
PhysicalSharedChannelAllocation ::= CHOICE {
                                  SEQUENCE {
       physicalSharedChannelAllocation-r3
       PhysicalSharedChannelAllocation-r3-IEs, laterNonCriticalExtensions SEQUENCE {
           -- Container for additional R99 extensions
           physicalSharedChannelAllocation-r3-add-ext BIT STRING OPTIONAL,
           nonCriticalExtensions
                                         SEQUENCE {} OPTIONAL
       } OPTIONAL
       DSCH-RNTI
rrc-TransactionIdentifier
criticalExtensions
r4

DSCH-RNTI
RRC-TransactionIdentifier,
CHOICE {
CROSSING
   later-than-r3
                                                                        OPTIONAL,
```

```
physicalSharedChannelAllocation-r4
                                                 PhysicalSharedChannelAllocation-r4-IEs,
                v4d0NonCriticalExtensions
                                                 SEQUENCE {
                     -- Container for adding non critical extensions after freezing REL-5
                     physicalSharedChannelAllocation-r4-add-ext BIT STRING
                                                                                      OPTIONAL,
                    v690NonCriticalExtensions SEQUENCE {
                        physicalSharedChannelAllocation-v690ext
                                                         PhysicalSharedChannelAllocation-v690ext-IEs,
                        v770NonCriticalExtensions
                                                         SEQUENCE {
                             physicalSharedChannelAllocation-v770ext
                                                    PhysicalSharedChannelAllocation-v770ext-IEs,
                                                              SEQUENCE {}
                             nonCriticalExtensions
                                                                             OPTIONAL
                                OPTIONAL
                             OPTIONAL
                        OPTIONAL
            criticalExtensions
                                             SEQUENCE {}
        }
    }
}
PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        dsch-RNTI
                                        DSCH-RNTT
                                                                              OPTIONAL.
        rrc-TransactionIdentifier
                                         RRC-TransactionIdentifier,
    -- Physical channel IEs
        ul-TimingAdvance
                                        UL-TimingAdvanceControl
                                                                              OPTIONAL,
        pusch-CapacityAllocationInfo PUSCH-CapacityAllocationInfo OPTIONAL, pdsch-CapacityAllocationInfo PDSCH-CapacityAllocationInfo OPTIONAL,
        -- TABULAR: If confirmRequest is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
                                       ENUMERATED {
        confirmRequest
                                             confirmPDSCH, confirmPUSCH }
                                                                            OPTIONAL.
        trafficVolumeReportRequest INTEGER (0...255) iscpTimeslotList TimeslotList
                                                                              OPTIONAL,
        iscpTimeslotList
                                             TimeslotList
                                                                                   OPTIONAL,
        requestPCCPCHRSCP
                                             BOOLEAN
}
PhysicalSharedChannelAllocation-r4-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message. -- Physical channel IEs
                                                                             OPTIONAL,
        ul-TimingAdvanceUL-TimingAdvanceControl-r4OPTIONAL,pusch-CapacityAllocationInfoPUSCH-CapacityAllocationInfo-r4OPTIONAL,pdsch-CapacityAllocationInfoPDSCH-CapacityAllocationInfo-r4OPTIONAL,
        -- TABULAR: If confirmRequest is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        confirmRequest
                                       ENUMERATED {
                                             confirmPDSCH, confirmPUSCH }
                                                                              OPTIONAL,
        trafficVolumeReportRequest INTEGER (0..255)
                                                                              OPTIONAL,
        iscpTimeslotList
                                         TimeslotList-r4
                                                                              OPTIONAL,
        requestPCCPCHRSCP
                                         BOOLEAN
}
PhysicalSharedChannelAllocation-v690ext-IEs ::= SEQUENCE {
    -- Physical Channel IEs
        beaconPLEst
                                         BEACON-PL-Est
                                                                              OPTIONAL
}
PhysicalSharedChannelAllocation-v770ext-IEs ::= SEQUENCE {
                                       UL-TimingAdvanceControl-r7
        ul-TimingAdvance
                                                                              OPTIONAL,
                                         PUSCH-CapacityAllocationInfo-r7
        pusch-CapacityAllocationInfo
                                                                              OPTIONAL,
        pdsch-CapacityAllocationInfo PDSCH-CapacityAllocationInfo-r7
                                                                              OPTIONAL
}
__ ****************
-- PUSCH CAPACITY REQUEST (TDD only)
__ ****************
PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
        dsch-RNTI
                                        DSCH-RNTI
                                                                              OPTIONAL,
    -- Measurement IEs
        trafficVolume
                                       TrafficVolumeMeasuredResultsList
                                                                            OPTIONAL,
        timeslotListWithISCP
                                        TimeslotListWithISCP
                                                                              OPTIONAL.
        primaryCCPCH-RSCP
                                         PrimaryCCPCH-RSCP
                                                                              OPTIONAL.
```

```
CHOICE {
             allocationConfirmation
                   pdschConfirmation
                                                                 PDSCH-Identity,
PUSCH-Identity
                   puschConfirmation
                                                                                                                              OPTIONAL,
             protocolErrorIndicator
             , protocolErrorIndicator ProtocolErrorIndicatorWithMoreInfo, laterNonCriticalExtensions SEQUENCE {
                    -- Container for additional R99 extensions
                   puschCapacityRequest-r3-add-ext BIT STRING OPTIONAL,
                   v590NonCriticalExtensions SEQUENCE {
                          puschCapacityRequest-v590ext
PUSCHCapacityRequest-v590ext,
                          nonCriticalExtensions
                                                                                SEQUENCE {} OPTIONAL
                                 OPTIONAL
                   OPTIONAL
}
PUSCHCapacityRequest-v590ext ::= SEQUENCE {
      primaryCCPCH-RSCP-delta
                                                                 DeltaRSCP
                                                                                                  OPTIONAL
   ****************
-- RADIO BEARER RECONFIGURATION
__ ****************
RadioBearerReconfiguration ::= CHOICE {
                                                           SEQUENCE {
             radioBearerReconfiguration-r3 RadioBearerReconfiguration-r3-IEs,
             -- Prefix "v3ao" is used (in one instance) to keep alignment with R99
             v3aoNonCriticalExtensions
                                                            SEQUENCE {
                   {\tt radioBearerReconfiguration-v3a0ext} \quad {\tt RadioBearerReconfiguration-v3a0ext},
                   -- Container for additional R99 extensions
                          radioBearerReconfiguration-r3-add-ext BIT STRING
                                                                                                                             OPTIONAL,
                                                                           SEQUENCE {
                          v4b0NonCriticalExtensions
                                 radioBearerReconfiguration-v4b0ext
                                                                                     RadioBearerReconfiguration-v4b0ext-IEs,
                                                                                           SEQUENCE {
                                 v590NonCriticalExtensions
                                       radioBearerReconfiguration-v590ext
                                                                                       RadioBearerReconfiguration-v590ext-IEs,
                                       v5d0NonCriticalExtenstions
                                                                                                    SEQUENCE {
                                              RadioBearerReconfiguration-v5d0ext-IEs, v690NonCriticalExtensions SEQUENCE {
                                              radioBearerReconfiguration-v5d0ext
                                                     radioBearerReconfiguration-v690ext
                                                                                               RadioBearerReconfiguration-v690ext-IEs,
                                                     v770NonCriticalExtensions
                                                                                                      SEQUENCE {
                                                           radioBearerReconfiguration-v770ext
                                                                                                  RadioBearerReconfiguration-v770ext-IEs,
                                                            nonCriticalExtensions
                                                                                                                 SEQUENCE {} OPTIONAL
                                                          OPTIONAL
                                                     OPTIONAL
                                             OPTIONAL
                                       OPTIONAL
                                 OPTIONAL
                          OPTIONAL
             ) OPTIONAL
      later-than-r3
                                                          SEQUENCE {
                                                         RRC-TransactionIdentifier,
            rrc-TransactionIdentifier
             criticalExtensions
                                                                  CHOICE {
                                                                    SEQUENCE {
                   r4
                           radioBearerReconfiguration-r4 RadioBearerReconfiguration-r4-IEs,
                          v4d0NonCriticalExtensions
                                                                                SEQUENCE {
                                 -- Container for adding non critical extensions after freezing REL-5
                                 radioBearerReconfiguration-r4-add-ext BIT STRING OPTIONAL,
                                                                                            SEQUENCE {
                                 v590NonCriticalExtensions
                                       radioBearerReconfiguration-v590ext
                                       RadioBearerReconfiguration-v590ext-IEs, v5d0NonCriticalExtenstions SECTION SEC
                                              radioBearerReconfiguration-v5d0ext
                                                                                                  RadioBearerReconfiguration-v5d0ext-IEs,
                                              v690NonCriticalExtensions
                                                                                                   SEQUENCE {
                                                     radioBearerReconfiguration-v690ext
                                                                                                  RadioBearerReconfiguration-v690ext-IEs,
                                                     v770NonCriticalExtensions
                                                                                                           SEQUENCE {
                                                            radioBearerReconfiguration-v770ext
                                                                                                  RadioBearerReconfiguration-v770ext-IEs,
                                                                                                                SEQUENCE { } OPTIONAL
                                                            nonCriticalExtensions
```

} OPTIONAL

```
OPTIONAL
                           OPTIONAL
                       OPTIONAL
                   OPTIONAL
           },
                                           CHOICE {
           criticalExtensions
                                                   SEQUENCE {
                   radioBearerReconfiguration-r5
                                                      RadioBearerReconfiguration-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    radioBearerReconfiguration-r5-add-ext BIT STRING OPTIONAL,
                                                      SEQUENCE {
                    v5d0NonCriticalExtenstions
                       {\tt radioBearerReconfiguration-v5d0ext} \quad {\tt RadioBearerReconfiguration-v5d0ext-IEs}, \\
                       v690NonCriticalExtensions
                                                           SEQUENCE {
                           radioBearerReconfiguration-v690ext
                                                           RadioBearerReconfiguration-v690ext-IEs,
                           v770NonCriticalExtensions
                                                               SEQUENCE {
                               radioBearerReconfiguration-v770ext
                                                           RadioBearerReconfiguration-v770ext-IEs,
                                                                   SEQUENCE {}
                               nonCriticalExtensions
                              OPTIONAL
                           OPTIONAL
                       OPTIONAL
                criticalExtensions
                                               CHOICE {
                                                       SEQUENCE {
                       radioBearerReconfiguration-r6
                                                        RadioBearerReconfiguration-r6-IEs,
                        -- Container for adding non critical extensions after freezing REL-7
                       radioBearerReconfiguration-r6-add-ext BIT STRING
                                                                                   OPTIONAL.
                                                          SEQUENCE {
                       v6b0NonCriticalExtensions
                           radioBearerReconfiguration-v6b0ext
                                                           RadioBearerReconfiguration-v6b0ext-IEs,
                           v6f0NonCriticalExtensions
                                                              SEQUENCE {
                               radioBearerRconfiguration-v6f0ext
                                                           RadioBearerReconfiguration-v6f0ext-IEs,
                                                                  SEQUENCE {
                               v770NonCriticalExtensions
                                   radioBearerReconfiguration-v770ext
                                                          RadioBearerReconfiguration-v770ext-IEs,
                                                                       SEQUENCE {} OPTIONAL
                                   nonCriticalExtensions
                                  OPTIONAL
                               OPTIONAL
                           OPTIONAL
                    }.
                    criticalExtensions
                                                   CHOICE {
                                                           SEQUENCE {
                           radioBearerReconfiguration-r7
                                                              RadioBearerReconfiguration-r7-IEs,
                           v780NonCriticalExtensions
                                                           SEQUENCE {
                               radioBearerReconfiguration-v780ext
                                                          RadioBearerReconfiguration-v780ext-IEs,
                                                            SEQUENCE {
                               v790NonCriticalExtensions
                                   radioBearerReconfiguration-v790ext
                                                           RadioBearerReconfiguration-v790ext-IEs,
                                   v7d0NonCriticalExtensions
                                                                 SEQUENCE {
                                       radioBearerReconfiguration-v7d0ext
                                                           RadioBearerReconfiguration-v7d0ext-IEs,
                                                                      SEQUENCE {
                                       v7f0NonCriticalExtensions
                                           {\tt radioBearerReconfiguration-v7f0ext}
                                                           RadioBearerReconfiguration-v7f0ext-IEs,
                                            v7g0NonCriticalExtensions
                                                                         SEQUENCE {
                                               radioBearerReconfiguration-v7q0ext
                                                           RadioBearerReconfiguration-v7g0ext-IEs,
                                               nonCriticalExtensions
                                                                          SEQUENCE {}
                                                                                          OPTIONAL
                                               OPTIONAL
                                           OPTIONAL
                                       OPTIONAL
                                   OPTIONAL
                               OPTIONAL
                       },
                       criticalExtensions
                                                      SEQUENCE {}
                   }
          }
      }
}
RadioBearerReconfiguration-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
```

```
### RRC-TransactionIdentifier | RRC-TransactionIdentifier, | IntegrityProtectionModeInfo | CipheringModeInfo | CipheringModeIn
                                                                        IntegrityProtectionModeInfo
                                                                                                                                            OPTIONAL,
                                                                                                                                            OPTIONAL,
              activationTime
                                                                        ActivationTime
                                                                                                                                            OPTIONAL.
              new-U-RNTI
                                                                         U-RNTI
                                                                                                                                            OPTIONAL,
              new-C-RNTI
                                                                        C-RNTI
                                                                                                                                            OPTIONAL,
              rrc-StateIndicator
                                                                        RRC-StateIndicator,
              utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
       -- Core network IEs
              cn-InformationInfo
                                                                         CN-InformationInfo
       -- UTRAN mobility IEs
       ura-Identity
-- Radio bearer IEs
                                                                        URA-Identity
                                                                                                                                           OPTIONAL.
              rab-InformationReconfigList RAB-InformationReconfigList
                                                                                                                                          OPTIONAL,
               -- NOTE: IE rb-InformationReconfigList should be optional in later versions
               -- of this message
              rb-InformationAffectedList RB-InformationAffectedList RB-InformationAffectedList
                                                                                                                                        OPTIONAL,
       -- Transport channel IEs
              ul-CommonTransChInfoUL-CommonTransChInfoul-deletedTransChInfoListUL-DeletedTransChInfoListul-AddReconfTransChInfoListUL-AddReconfTransChInfoList
              ul-CommonTransChInfo
                                                                        UL-CommonTransChInfo
                                                                                                                                           OPTIONAL,
                                                                                                                                           OPTIONAL,
                                                                                                                                           OPTIONAL,
              -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification, -- they should not be sent and if received they should be ignored.
                                                                         CHOICE {
              dummy
                      fdd
                                                                                SEOUENCE {
                             dummy1
                                                                                        CPCH-SetID
                                                                                                                                            OPTIONAL,
                                                                                        DRAC-StaticInformationList OPTIONAL
                             dummy2
                      }.
                                                                                NULL
                      tdd
                                                                                                                                            OPTIONAL.
              dl-CommonTransChInfo
dl-DeletedTransChInfoList
dl-AddReconfTransChInfoList
DL-AddReconfTransChInfo2List
                                                                                                                                           OPTIONAL,
                                                                                                                                          OPTIONAL,
       -- Physical channel IEs
              frequencyInfo
                                                                        FrequencyInfo
                                                                                                                                           OPTIONAL,
              maxAllowedUL-TX-Power
                                                                    MaxAllowedUL-TX-Power
                                                                                                                                           OPTIONAL,
                                                                        UL-ChannelRequirement
              ul-ChannelRequirement
                                                                                                                                           OPTIONAL,
              modeSpecificPhysChInfo
                                                                        CHOICE {
                                                                               SEQUENCE {
                             -- dummy is not used in this version of specification, it should
                             -- not be sent and if received it should be ignored.
                                                                                       DL-PDSCH-Information
                                                                                                                                         OPTIONAL
                      },
                      tdd
                                                                                NULL
              dl-CommonInformation
                                                                        DL-CommonInformation
                                                                                                                                           OPTIONAL.
               -- NOTE: IE dl-InformationPerRL-List is optional in later versions
               -- of this message
              dl-InformationPerRL-List
                                                                 DL-InformationPerRL-List
}
RadioBearerReconfiguration-v3a0ext ::= SEQUENCE {
       -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received the UE behaviour
       -- is unspecified
       new-DSCH-RNTI
                                                                  DSCH-RNTI
                                                                                                                                    OPTIONAL
}
RadioBearerReconfiguration-v4b0ext-IEs ::= SEQUENCE {
       -- Physical channel IEs
              -- dummy is not used in this version of the specification, it should
               -- not be sent and if received it should be ignored.
                                                                                SSDT-UL
                                                                                                                                                   OPTIONAL,
               -- The order of the RLs in IE cell-id-PerRL-List is the same as
              -- in IE DL-InformationPerRL-List included in this message
              cell-id-PerRL-List
                                                                                 CellIdentity-PerRL-List
                                                                                                                                                   OPTIONAL
RadioBearerReconfiguration-v590ext-IEs ::= SEQUENCE {
       -- Physical channel IEs
                                                                                                                                        OPTIONAL
              dl-TPC-PowerOffsetPerRL-List DL-TPC-PowerOffsetPerRL-List
}
{\tt RadioBearerReconfiguration-v5d0ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
       --Radio Bearer IEs
              pdcp-ROHC-TargetMode
                                                                      PDCP-ROHC-TargetMode
                                                                                                                                         OPTIONAL
}
```

```
RadioBearerReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
                                            IntegrityProtectionModeInfo
        integrityProtectionModeInfo
                                                                                     OPTIONAL,
                                            CipheringModeInfo
         cipheringModeInfo
                                                                                     OPTIONAL.
         activationTime
                                            ActivationTime
                                                                                     OPTIONAL,
        new-U-RNTI
                                            U-RNTI
        new-C-RNTI
                                            C-RNTI
                                                                                     OPTIONAL,
         -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
         -- the UE behaviour is unspecified
         new-DSCH-RNTI
                                            DSCH-RNTI
         rrc-StateIndicator
                                            RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff
                                            UTRAN-DRX-CycleLengthCoefficient
                                                                                     OPTIONAL.
    -- Core network IEs
        cn-InformationInfo
                                            CN-InformationInfo
                                                                                     OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity
                                            URA-Identity
                                                                                     OPTIONAL,
    -- Radio bearer IEs
        rab-InformationReconfigList RAB-InformationReconfigList rb-InformationAffectedList RB-InformationAffectedList RB-InformationAffectedList
                                                                                     OPTIONAL,
                                                                                    OPTIONAL,
    -- Transport channel IEs
         ul-CommonTransChInfo
                                            UL-CommonTransChInfo-r4
                                                                                    OPTIONAL,
        ul-CommonTransChInfoUL-CommonTransChInfo-r4ul-deletedTransChInfoListUL-DeletedTransChInfoListul-AddReconfTransChInfoListUL-AddReconfTransChInfoList
                                                                                     OPTIONAL,
                                                                                    OPTIONAL.
         -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification, -- they should not be sent and if received they should be ignored.
         dummy
                                            CHOICE {
             fdd
                                                 SEQUENCE {
                 dummy1
                                                     CPCH-SetID
                                                     DRAC-StaticInformationList OPTIONAL
                  dummy2
             tdd
                                                 NULL
        dl-DeletedTransChInfo DL-CommonTransChInfo-r4
dl-DeletedTransChInfoList DL-DeletedTransChInfoList
dl-AddReconfTransChInfoList
Physical channel IRs
                                                                                     OPTIONAL,
                                                                                     OPTIONAL,
                                                                                     OPTIONAL,
                                            DL-AddReconfTransChInfoList-r4
                                                                                     OPTIONAL,
    -- Physical channel IEs
         frequencyInfo
                                            FrequencyInfo
                                                                                    OPTIONAL,
        maxAllowedUL-TX-Power
                                         MaxAllowedUL-TX-Power
                                                                                     OPTIONAL.
         ul-ChannelRequirement
                                            UL-ChannelRequirement-r4
                                                                                     OPTIONAL,
                                            CHOICE {
         modeSpecificPhysChInfo
                                                SEQUENCE {
             fdd
                  -- dummy is not used in this version of specification, it should
                  \mbox{--} not be sent and if received it should be ignored.
                                                     DL-PDSCH-Information
             },
             tdd
                                                 NULL
         dl-CommonInformation
                                            DL-CommonInformation-r4
                                                                                    OPTIONAL.
                                          DL-CommonThrot.mccll
DL-InformationPerRL-List-r4
         dl-InformationPerRL-List
                                                                                    OPTIONAL
}
RadioBearerReconfiguration-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
         integrityProtectionModeInfo
                                            IntegrityProtectionModeInfo
                                                                                     OPTIONAL,
         cipheringModeInfo
                                            CipheringModeInfo
         activationTime
                                            ActivationTime
                                                                                     OPTIONAL,
        new-U-RNTT
                                            II-RNTT
                                                                                     OPTIONAL,
        new-C-RNTI
                                            C-RNTI
                                                                                     OPTIONAL,
         -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
         -- the UE behaviour is unspecified
         new-DSCH-RNTI
                                            DSCH-RNTI
                                                                                     OPTIONAL.
         new-H-RNTI
                                            H-RNTI
                                                                                     OPTIONAL,
         rrc-StateIndicator
                                            RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff
                                            UTRAN-DRX-CycleLengthCoefficient
                                                                                    OPTIONAL,
    -- Core network IEs
        cn-InformationInfo
                                            CN-InformationInfo
                                                                                     OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity
                                            URA-Identity
                                                                                     OPTIONAL,
    -- Specification mode information
                                            CHOICE {
         specificationMode
             complete
                                                 SEQUENCE {
             -- Radio bearer IEs
                 rab-InformationReconfigList
                                                     RAB-InformationReconfigList
                                                                                              OPTIONAL,
                 rb-InformationReconfigList
rb-InformationAffectedList
                                                     RB-InformationReconfigList-r5
                                                                                              OPTIONAL,
                                                     RB-InformationAffectedList-r5
                                                                                              OPTIONAL,
                  rb-PDCPContextRelocationList
                                                     RB-PDCPContextRelocationList
                                                                                              OPTIONAL,
             -- Transport channel IEs
```

```
ul-CommonTransChInfo
                                                 UL-CommonTransChInfo-r4
                                                                                      OPTIONAL.
                ul-deletedTransChInfoList
                ul-deletedTransChInfoList UL-DeletedTransChInfoList ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList
                                                                                      OPTIONAL,
                                                                                      OPTIONAL,
                -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the
                -- specification, they should not be sent and if received they should be ignored.
                dummy
                                                 CHOICE {
                    fdd
                                                     SEQUENCE {
                                                          CPCH-SetID
                        dummy1
                                                                                      OPTIONAL.
                        dummy2
                                                          DRAC-StaticInformationList OPTIONAL
                    },
                    tdd
                                                     NULL
                                                                                      OPTIONAL.
                dl-CommonTransChInfo DL-CommonTransChInfo-r4
dl-DeletedTransChInfoList DL-DeletedTransChInfoList-r5
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5
                                                                                      OPTIONAL.
                                                                                      OPTIONAL,
                                                 DL-AddReconfTransChInfoList-r5
                                                                                      OPTIONAL
            }.
                                            SEQUENCE {
            preconfiguration
            -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
            -- one for the FDD only elements and one for the TDD only elements, so that one
            -- FDD/TDD choice in this level is sufficient.
                preConfigMode
                                                CHOICE {
                                                 PredefinedConfigIdentity,
                    predefinedConfigIdentity
                    defaultConfig
                                                     SEQUENCE {
                        defaultConfigMode
                        defaultConfigIdentity

DefaultConfigMode,
DefaultConfigTdentity
                                                         DefaultConfigIdentity-r5
                }
            }
        }.
    -- Physical channel IEs
        frequencyInfo
                                        FrequencyInfo
                                                                              OPTIONAL.
                                       MaxAllowedUL-TX-Power
        maxAllowedUL-TX-Power
                                                                              OPTIONAL,
        ul-ChannelRequirement
                                        UL-ChannelRequirement-r5
                                                                              OPTIONAL,
                                        CHOICE {
        modeSpecificPhysChInfo
            fdd
                                            SEQUENCE {
                 -- dummy is not used in this version of specification, it should
                -- not be sent and if received it should be ignored.
                                                 DL-PDSCH-Information
                                                                             OPTIONAL
            },
            tdd
                                             NULL
        dl-HSPDSCH-Information
                                      DL-HSPDSCH-Information
                                                                              OPTIONAL,
        dl-CommonInformation
                                       DL-CommonInformation-r5
                                                                             OPTIONAL.
                                   DL-InformationPerRL-List-r5
        dl-InformationPerRL-List
                                                                             OPTIONAL
}
RadioBearerReconfiguration-r6-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo
                                        IntegrityProtectionModeInfo
                                                                              OPTIONAL.
        cipheringModeInfo
                                         CipheringModeInfo
                                                                              OPTIONAL,
        activationTime
                                        ActivationTime
                                                                              OPTIONAL,
        delayRestrictionFlag
                                         DelayRestrictionFlag
                                                                              OPTIONAL,
        new-U-RNTT
                                         IJ-RNTT
                                                                              OPTIONAL.
        new-C-RNTI
                                         C-RNTI
                                                                              OPTIONAL,
        -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
        -- and if received the UE behaviour is unspecified
        new-DSCH-RNTI
                                         DSCH-RNTI
                                                                              OPTIONAL,
        new-H-RNTI
                                         H-RNTI
                                                                              OPTIONAL,
        newPrimary-E-RNTI
                                        E-RNTI
                                                                              OPTIONAL,
        newSecondary-E-RNTI
                                        E-RNTI
                                                                              OPTIONAL,
        rrc-StateIndicator
                                        RRC-StateIndicator,
       utran-DRX-CycleLengthCoeff
                                        UTRAN-DRX-CycleLengthCoefficient
                                                                             OPTIONAL.
    -- Core network IEs
        cn-InformationInfo
                                         CN-InformationInfo-r6
                                                                              OPTIONAL.
    -- UTRAN mobility IEs
       ura-Identity
                                        URA-Identity
                                                                              OPTIONAL.
    -- Specification mode information
                                        CHOICE {
        specificationMode
                                           SEQUENCE {
            complete
            -- Radio bearer IEs
                rab-InformationReconfigList
                                                 RAB-InformationReconfigList
                                                                                      OPTIONAL.
                rb-InformationReconfigList
                                                                                       OPTIONAL,
                                                 RB-InformationReconfigList-r6
                rb-InformationAffectedList
                                                 RB-InformationAffectedList-r6
                                                                                       OPTIONAL,
                rb-PDCPContextRelocationList RB-PDCPContextRelocationList
                                                                                      OPTIONAL,
                pdcp-ROHC-TargetMode
                                                PDCP-ROHC-TargetMode
                                                                                      OPTIONAL,
            -- Transport channel IEs
                ul-CommonTransChInfo
                                                 UL-CommonTransChInfo-r4
                                                                                      OPTIONAL,
                ul-deletedTransChInfoList
                                                 UL-DeletedTransChInfoList-r6
                                                                                      OPTIONAL,
```

```
ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList-r6
                                                                                                 OPTIONAL,
                  dl-CommonTransChInfo
                                                       DL-CommonTransChInfo-r4
                                                                                                  OPTIONAL,
                  dl-CommonTransChInfo DL-CommonTransChInfo-r4
dl-DeletedTransChInfoList DL-DeletedTransChInfoList-r5
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5
                                                                                                 OPTIONAL,
                                                                                                 OPTIONAL
              preconfiguration
                                                  SEQUENCE {
              -- All IEs that include an FDD/TDD choice are split in two IEs for this message, -- one for the FDD only elements and one for the TDD only elements, so that one
              -- \ensuremath{\mathsf{FDD}}/\ensuremath{\mathsf{TDD}} choice in this level is sufficient.
                  preConfigMode
                                                    CHOICE {
                           definedConfigIdentity PredefinedConfigIdentity, aultConfig SEQUENCE {
   defaultConfigMode DefaultConfigIdentity-r6
                       predefinedConfigIdentity
                       defaultConfig
                  }
             }
    -- Physical channel IEs
         frequencyInfo
                                              FrequencyInfo
                                                                                         OPTIONAL,
                                            MaxAllowedUL-TX-Power
         maxAllowedUL-TX-Power
                                                                                        OPTIONAL.

    ul-DPCH-Info
    UL-DPCH-Info-r6

    ul-EDCH-Information
    UL-EDCH-Information-r6

    dl-HSPDSCH-Information
    DL-HSPDSCH-Information-r6

    dl-CommonInformation
    DL-CommonInformation-r6

    dl-InformationPerRL-List
    DL-InformationPerRL-List-r6

                                                                                        OPTIONAL,
                                                                                        OPTIONAL,
                                                                                        OPTIONAL.
                                                                                        OPTIONAL,
    -- MBMS IEs
         mbms-PL-ServiceRestrictInfo MBMS-PL-ServiceRestrictInfo-r6
                                                                                       OPTIONAL
}
RadioBearerReconfiguration-v690ext-IEs ::= SEQUENCE {
    -- User Equipment IEs
        delayRestrictionFlag
                                            DelayRestrictionFlag
                                                                                        OPTIONAL,
    -- Core network IEs
                                            PLMN-Identity
         primary-plmn-Identity
                                                                                        OPTIONAL,
    -- Physical channel IEs
        -- The IE hard-Preamble-Mode should not be used in the r3 and r4 versions of the message
         -- If included in the r3 or r4 version of the message, the UE should ignore the IE
         harq-Preamble-Mode
                                              HARO-Preamble-Mode
                                                                                        OPTIONAL.
         beaconPLEst
                                              BEACON-PL-Est
                                                                                        OPTIONAL,
         postVerificationPeriod
                                              ENUMERATED { true }
                                                                                        OPTIONAL,
                                              DHS-Sync
         dhs-sync
                                                                                        OPTIONAL.
         timingMaintainedSynchInd
                                             TimingMaintainedSynchInd
                                                                                        OPTIONAL,
    -- MBMS IEs
         mbms-PL-ServiceRestrictInfo MBMS-PL-ServiceRestrictInfo-r6
                                                                                       OPTIONAL
}
RadioBearerReconfiguration-v6b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-InformationPerRL-List-v6b0ext DL-InformationPerRL-List-v6b0ext OPTIONAL
}
RadioBearerReconfiguration-v6f0ext-IEs ::= SEQUENCE {
    -- Specification mode information
        specification mode Throughout Specification Mode CHOICE {
    complete SEQUENCE {
    -- Radio bearer IES
                  rab-InformationMBMSPtpList RAB-InformationMBMSPtpList
                                                                                               OPTIONAL
              }
         }
}
RadioBearerReconfiguration-r7-IEs ::= SEQUENCE {
    -- User equipment IEs
         OPTIONAL.
         cipheringModeInfo
                                              CipheringModeInfo-r7
                                                                                         OPTIONAL.
         activationTime
                                              ActivationTime
                                                                                         OPTIONAL,
         delayRestrictionFlag
                                              DelayRestrictionFlag
                                                                                        OPTIONAL,
         new-U-RNTI
                                              U-RNTI
                                                                                        OPTIONAL.
         new-C-RNTI
                                              C-RNTI
                                                                                         OPTIONAL,
         -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
         -- and if received the UE behaviour is unspecified
         new-DSCH-RNTI
                                             DSCH-RNTI
                                                                                        OPTIONAL,
         new-H-RNTI
                                              H-RNTI
                                                                                         OPTIONAL,
         newPrimary-E-RNTI
                                              E-RNTI
                                                                                         OPTIONAL,
         newPrimary-E-RNTI E-RNTI
newSecondary-E-RNTI E-RNTI
rrc-StateIndicator RRC-Sta
                                                                                        OPTIONAL,
                                              RRC-StateIndicator.
         ueMobilityStateIndicator
                                            High-MobilityDetected
                                                                                        OPTIONAL,
```

```
utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient-r7 OPTIONAL,
      -- Core network IEs
            cn-InformationInfo
                                                             CN-InformationInfo-r6
                                                                                                                          OPTIONAL,
      -- UTRAN mobility IEs
            ura-Identity
                                                               URA-Identity
                                                                                                                          OPTIONAL,
             supportForChangeOfUE-Capability BOOLEAN
                                                                                                                          OPTIONAL,
            responseToChangeOfUE-Capability ENUMERATED { true }
                                                                                                                          OPTIONAL,
      -- Specification mode information
                                                             CHOICE {
             specificationMode
                   complete
                                                             SEQUENCE {
                   -- Radio bearer IEs
                         rab-InformationReconfigList RAB-InformationReconfigList OPTIONAL, rab-InformationReconfigList RAB-InformationMBMSPtpList OPTIONAL, rb-InformationReconfigList RB-InformationReconfigList-r7 OPTIONAL, rb-InformationAffectedList RB-InformationAffectedList-r7 OPTIONAL, rb-PDCPContextRelocationList RB-PDCPContextRelocationList OPTIONAL, pdgs-ROHC-TargetMode OPTIONAL, PDCP-ROHC-TargetMode OPTIONAL,
                   pdcp-ROHC-TargetMode
-- Transport channel IEs
                                                                                                                                      OPTIONAL,
                         ul-CommonTransChInfo-r4 OPTIONAL,
ul-deletedTransChInfoList UL-DeletedTransChInfoList-r6 OPTIONAL,
ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList-r7 OPTIONAL,
dl-CommonTransChInfo DL-CommonTransChInfo-r4 OPTIONAL,
dl-DeletedTransChInfoList DL-DeletedTransChInfoList-r7 OPTIONAL,
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r7 OPTIONAL,
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r7 OPTIONAL
                   }.
                                                                     SEQUENCE {
                   preconfiguration
                   -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
                    -- one for the FDD only elements and one for the TDD only elements, so that one
                   -- FDD/TDD choice in this level is sufficient.
                                                                        CHOICE {
                         preConfigMode
                                predefinedConfigIdentity
defaultConfig
defaultConfigMode
defaultConfigIdentity
DefaultConfigMode,
DefaultConfigIdentity-r6
                                }
                         }
                   }
           Physical channel IES
frequencyInfo FrequencyInfo OPTIONAL,
multi-frequencyInfo Multi-frequencyInfo-LCR-r7 OPTIONAL,
dtx-drx-TimingInfo DTX-DRX-TimingInfo-r7 OPTIONAL,
dtx-drx-Info DTX-DRX-Info-r7 OPTIONAL,
hs-scch-LessInfo HS-SCCH-LessInfo-r7 OPTIONAL,
mimoParameters MIMO-Parameters-r7 OPTIONAL,
maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
ul-DPCH-Info UL-DPCH-Info-r7 OPTIONAL,
ul-EDCH-Information UL-EDCH-Information-r7 OPTIONAL,
dl-HSPDSCH-Information DL-HSPDSCH-Information-r7 OPTIONAL,
dl-CommonInformation DL-CommonInformation-r7 OPTIONAL,
dl-InformationPerRL-List DL-InformationPerRL-List-r7 OPTIONAL,
MBMS IES
      -- Physical channel IEs
      -- MBMS TES
            mbms-PL-ServiceRestrictInfo MBMS-PL-ServiceRestrictInfo-r6
                                                                                                                         OPTIONAL
}
{\tt RadioBearerReconfiguration-v770ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
      -- User equipment IEs
           ueMobilityStateIndicator
                                                            High-MobilityDetected
                                                                                                                           OPTIONAL
}
{\tt RadioBearerReconfiguration-v780ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
      -- Physical channel IEs
           hs-DSCH-TBSizeTable
                                                             HS-DSCH-TBSizeTable
                                                                                                                         OPTIONAL
}
RadioBearerReconfiguration-v790ext-IEs ::= SEQUENCE {
      -- Container for adding non critical extensions after freezing REL-8
                                                                                                                          OPTIONAL
           radioBearerReconfiguration-r7-add-ext BIT STRING
}
RadioBearerReconfiguration-v7d0ext-IEs ::= SEQUENCE {
      -- Physical channel IEs
           ul-EDCH-Information
                                                              UL-EDCH-Information-ext
                                                                                                                         OPTIONAL
}
RadioBearerReconfiguration-v7f0ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
                                                                                                                         OPTIONAL
      mimoParameters
                                                               MIMO-Parameters-v7f0ext
```

```
}
RadioBearerReconfiguration-v7g0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    mimoParameters
                                          MIMO-Parameters-v7g0ext
                                                                               OPTIONAL
}
__ ***************
-- RADIO BEARER RECONFIGURATION COMPLETE
__ ***************
RadioBearerReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
       rrc-TransactionIdentifier RRC-TransactionIdentifier, ul-IntegProtActivationInfo IntegrityProtActivationInfo
                                                                               OPTIONAL.
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
                                 UL-TimingAdvance
        ul-TimingAdvance
                                                                                OPTIONAL.
    -- Radio bearer IEs
        count-C-ActivationTime
                                         ActivationTime
                                                                                OPTIONAL,
         -- dummy is not used in this version of the specification and
        -- it should be ignored by the receiver.
        dummy RB-ActivationTimeInfoList OPTIONAL, ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo OPTIONAL, laterNonCriticalExtensions SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerReconfigurationComplete-r3-add-ext BIT STRING OPTIONAL,
            v770NonCriticalExtensions SEQUENCE {
                radioBearerReconfigurationComplete-v770ext
                                                  RadioBearerReconfigurationComplete-v770ext-IEs,
                                                  SEQUENCE {} OPTIONAL
                nonCriticalExtensions
                OPTIONAL
        } OPTIONAL
}
RadioBearerReconfigurationComplete-v770ext-IEs ::= SEQUENCE {
      -- TABULAR: EXT-UL-TimingAdvance is applicable for TDD mode only.
                                                 EXT-UL-TimingAdvance OPTIONAL, ENUMERATED { true } OPTIONAL
        ext-UL-TimingAdvance
        deferredMeasurementControlReading
}
__ ****************
-- RADIO BEARER RECONFIGURATION FAILURE
__ ****************
RadioBearerReconfigurationFailure ::= SEQUENCE {
        User equipment IEs

rrc-TransactionIdentifier RRC-TransactionIdentifier,
failureCause FailureCauseWithProtErr,
   -- User equipment IEs
    -- Radio bearer IEs
        potentiallySuccesfulBearerList RB-IdentityList laterNonCriticalExtensions SEQUENCE {
                                                                               OPTIONAL.
            -- Container for additional R99 extensions
            radioBearerReconfigurationFailure-r3-add-ext BIT STRING
                                                                                   OPTIONAL,
            nonCriticalExtensions
                                              SEQUENCE {} OPTIONAL
        } OPTIONAL
}
__ ****************
-- RADIO BEARER RELEASE
__ ****************
RadioBearerRelease ::= CHOICE {
        SEQUENCE {
radioBearerRelease-r3 RadioBearerRelease-r3-IEs,
v3a0NonCriticalExtensions SEQUENCE {
radioBearerRelease-v3a0ext
radioBearerRelease-v3a0ext
laterNonCriticalExtensions SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerRelease-r3-add-ext BIT STRING v4b0NonCriticalExtensions SEQUENCE {
                                                                  OPTIONAL,
                    radioBearerRelease-v4b0ext RadioBearerRelease-v4b0ext-IEs, v590NonCriticalExtensions SEQUENCE {
```

```
radioBearerRelease-v590ext
                                                      RadioBearerRelease-v590ext-IEs,
                           UNONCriticalExtensions SEQUENCE {
radioBearerRelease-v690ext
RadioBe
                        v690NonCriticalExtensions
                                                          RadioBearerRelease-v690ext-IEs,
                            v770NonCriticalExtensions
                                                            SEQUENCE {
                                radioBearerRelease-v770ext
                                                               RadioBearerRelease-v770ext-IEs,
                                nonCriticalExtensions
                                                                SEQUENCE {} OPTIONAL
                               OPTIONAL
                            OPTIONAL
                       OPTIONAL
                    OPTIONAL
                OPTIONAL
           OPTIONAL
    later-than-r3
                                   SEQUENCE {
       rrc-TransactionIdentifier
                                       RRC-TransactionIdentifier,
                                        CHOICE {
        criticalExtensions
                                        SEQUENCE {
                radioBearerRelease-r4
                                               RadioBearerRelease-r4-IEs,
                v4d0NonCriticalExtensions
                                                SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    radioBearerRelease-r4-add-ext BIT STRING
                                                                      OPTIONAL,
                    v590NonCriticalExtensions
                                                    SEQUENCE {
                                                   RadioBearerRelease-v590ext-IEs,
                        radioBearerRelease-v590ext
                                                       SEQUENCE {
                        v690NonCriticalExtensions
                            radioBearerRelease-v690ext RadioBearerRelease-v690ext-IEs,
                            v770NonCriticalExtensions
                                                            SEQUENCE {
                               radioBearerRelease-v770ext RadioBearerRelease-v770ext-IEs,
                               nonCriticalExtensions
                                                                SEQUENCE {}
                                                                             OPTIONAL
                               OPTIONAL
                            OPTIONAL
                        OPTIONAL
                }
                   OPTIONAL
            },
            criticalExtensions
                                           CHOICE {
                                               SEQUENCE {
               r5
                    radioBearerRelease-r5
                                                   RadioBearerRelease-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    radioBearerRelease-r5-add-ext BIT STRING
                                                                OPTIONAL,
                       ONOnCriticalExtensions SEQUENCE {
radioBearerRelease-v690ext RadioBearerRelease-v690ext-IEs,
                    v690NonCriticalExtensions
                                                       SEQUENCE {
                        v770NonCriticalExtensions
                            radioBearerRelease-v770ext RadioBearerRelease-v770ext-IEs,
                                                           SEQUENCE {}
                            nonCriticalExtensions
                            OPTIONAL
                    }
                       OPTIONAL
                criticalExtensions
                                               CHOICE {
                                                SEQUENCE {
                    r6
                       radioBearerRelease-r6
                                                       RadioBearerRelease-r6-IEs.
                        -- Container for adding non critical extensions after freezing REL-7
                       radioBearerRelease-r6-add-ext BIT STRING
                                                                     OPTIONAL.
                                                       SEQUENCE {
                        v6b0NonCriticalExtensions
                            radioBearerRelease-v6b0ext RadioBearerRelease-v6b0ext-IEs,
v770NonCriticalExtensions SEQUENCE {
                                radioBearerRelease-v770ext
                                                                RadioBearerRelease-v770ext-IEs,
                               nonCriticalExtensions
                                                                SEQUENCE {}
                                                                              OPTIONAL
                               OPTIONAL
                            OPTIONAL
                    },
                    criticalExtensions
                                                   CHOICE {
                                                    SEQUENCE {
                            radioBearerRelease-r7
                                                       RadioBearerRelease-r7-IEs,
                            -- Container for adding non critical extensions after freezing REL-8
                            radioBearerRelease-r7-add-ext BIT STRING
                                                                          OPTIONAL,
                            v780NonCriticalExtensions
                                                          SEQUENCE {
                                radioBearerRelease-v780ext
                                                               RadioBearerRelease-v780ext-IEs,
                                v7d0NonCriticalExtensions
                                                                SEQUENCE {
                                    radioBearerRelease-v7d0ext RadioBearerRelease-v7d0ext-IEs,
                                                                    SEQUENCE {
                                    v7f0NonCriticalExtensions
                                        radioBearerRelease-v7f0ext RadioBearerRelease-v7f0ext-IEs,
                                                                       SEQUENCE {
                                        v7g0NonCriticalExtensions
                                            radioBearerRelease-v7q0ext RadioBearerRelease-v7q0ext-
TES
                                            nonCriticalExtensions
                                                                          SEQUENCE {}
                                                                                         OPTIONAL
                                            OPTIONAL
                                        OPTIONAL
                                    OPTIONAL
                               OPTIONAL
```

```
SEOUENCE {}
                                                  criticalExtensions
                                          }
                                }
                       }
              }
       }
}
RadioBearerRelease-r3-IEs ::= SEQUENCE {
         -- User equipment IEs
                rrc-TransactionIdentifier
                 rrc-TransactionIdentifier RRC-TransactionIdentifier, integrityProtectionModeInfo CipheringModeInfo CipheringModeInfo
                                                                                                                                                               OPTIONAL,
                cipheringModeInfo
                                                                                                                                                               OPTIONAL.
                                                                                  ActivationTime
                 activationTime
                                                                                                                                                                OPTIONAL,
               THE WHIT OPTIONAL, OPTIONA
        -- Core network IEs
                 signallingConnectionRelIndication CN-DomainIdentity
                                                                                                                                                                OPTIONAL,
        -- UTRAN mobility IEs
                ura-Identity
                                                                                  URA-Identity
                                                                                                                                                                OPTIONAL,
        -- Radio bearer IEs
                rab-InformationReconfigList
rb-InformationReleaseList
rb-InformationAffectedList
rb-InformationAffectedList
dl-CounterSynchronisationInfo

RAB-InformationReconfigList
RB-InformationReleaseList,
RB-InformationAffectedList
DL-CounterSynchronisationInfo
                                                                                                                                                               OPTIONAL,
                                                                                                                                                            OPTIONAL.
                                                                                                                                                               OPTIONAL,
        -- Transport channel IEs
                 ul-CommonTransChInfoUL-CommonTransChInfoOPTIONAL,ul-deletedTransChInfoListUL-DeletedTransChInfoListOPTIONAL,ul-AddReconfTransChInfoListUL-AddReconfTransChInfoListOPTIONAL,
                ul-CommonTransChInfo
                ul-deletedTransChInfoList
                 -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification,
                 -- they should not be sent and if received they should be ignored.
                                                                                  CHOICE {
                dummy
                                                                                            SEQUENCE {
                         fdd
                                 dummy1
                                                                                                   CPCH-SetID
                                                                                                                                                                OPTIONAL,
                                                                                                     DRAC-StaticInformationList OPTIONAL
                                 dummy2
                         },
                         tdd
                                                                                            NULL
                                                                                                                                                               OPTIONAL,
                dl-CommonTransChInfo
dl-DeletedTransChInfoList
dl-AddReconfTransChInfoList
DL-AddReconfTransChInfoList
                                                                                                                                                               OPTIONAL,
                                                                                                                                                             OPTIONAL,
        -- Physical channel IEs
                 frequencyInfo
                                                                                   FrequencyInfo
                maxAllowedUL-TX-Power
ul-ChannelRequirement
modeSpecificPhysChInfo

MaxAllowedUL-TX-Power
UL-ChannelRequirement
CHOICE {
                                                                                MaxAllowedUL-TX-Power
                                                                                                                                                               OPTIONAL,
                                                                                                                                                               OPTIONAL.
                                                                                          SEQUENCE {
                                 -- dummy is not used in this version of specification, it should
                                 -- not be sent and if received it should be ignored.
                                                                                                    DL-PDSCH-Information
                                 dummy
                                                                                                                                                             OPTIONAL
                         },
                                                                                  NULL
                dl-CommonInformation DL-CommonInformation dl-InformationPerRL-List DL-InformationPerRL-List
                                                                                                                                                              OPTIONAL.
                                                                                                                                                             OPTIONAL
RadioBearerRelease-v3a0ext ::= SEQUENCE {
        -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received the UE behaviour
        -- is unspecified
                                                                          DSCH-RNTI
       new-DSCH-RNTI
                                                                                                                                                       OPTIONAL
}
RadioBearerRelease-v4b0ext-IEs ::= SEQUENCE {
        -- Physical channel IEs
                 -- dummy is not used in this version of the specification, it should
                 -- not be sent and if received it should be ignored.
                dummy
                                                                                            SSDT-UL
                                                                                                                                                                       OPTIONAL,
                 -- The order of the RLs in IE cell-id-PerRL-List is the same as
                 -- in IE DL-InformationPerRL-List included in this message
                cell-id-PerRL-List
                                                                                            CellIdentity-PerRL-List
                                                                                                                                                                    OPTIONAL
RadioBearerRelease-v590ext-IEs ::= SEQUENCE {
```

```
-- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List DL-TPC-PowerOffsetPerRL-List
                                                                                 OPTIONAL
}
RadioBearerRelease-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
                                          IntegrityProtectionModeInfo
        integrityProtectionModeInfo
                                                                                 OPTIONAL.
        cipheringModeInfo
                                          CipheringModeInfo
                                                                                 OPTIONAL,
        activationTime
                                          ActivationTime
                                                                                 OPTIONAL,
        new-U-RNTI
                                          U-RNTI
                                                                                 OPTIONAL,
        new-C-RNTI
                                          C-RNTI
         -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
        -- the UE behaviour is unspecified
                                                                                 OPTIONAL,
        new-DSCH-RNTI
                                         DSCH-RNTI
        rrc-StateIndicator
                                          RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
                               CN-InformationInfo
    -- Core network IEs
        cn-InformationInfo
                                                                                 OPTIONAL,
        signallingConnectionRelIndication CN-DomainIdentity
                                                                                 OPTIONAL.
    -- UTRAN mobility IEs
                                          URA-Identity
        ura-Identity
                                                                                 OPTIONAL.
    -- Radio bearer IEs
        rab-InformationReconfigList rb-InformationReleaseList rb-InformationAffectedList RB-InformationAffectedList
                                                                                OPTIONAL,
                                                                                OPTIONAL.
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo
                                                                                 OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                          UL-CommonTransChInfo-r4
                                                                                OPTIONAL,
        ul-deletedTransChInfoList UL-DeletedTransChInfoList ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList
                                                                                OPTIONAL.
         -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification,
        -- they should not be sent and if received they should be ignored.
        dummy
                                          CHOICE {
            fdd
                                               SEQUENCE {
                                                   CPCH-SetID
                 dummy1
                                                                                 OPTIONAL.
                 dummy2
                                                   DRAC-StaticInformationList OPTIONAL
            },
            tdd
                                              NULL
                                                                                OPTIONAL,
        dl-CommonTransChInfo DL-CommonTransChInfo-r4
dl-DeletedTransChInfoList DL-DeletedTransChInfoList
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4
                                                                                 OPTIONAL,
                                                                                OPTIONAL,
    -- Physical channel IEs
        frequencyInfo
                                          FrequencyInfo
        maxAllowedUL-TX-Power
ul-ChannelRequirement
modeSpecificPhysChInfo
                                         MaxAllowedUL-TX-Power
                                                                                 OPTIONAL,
                                          UL-ChannelRequirement-r4
                                                                                 OPTIONAL,
                                         CHOICE {
                                             SEQUENCE {
                 -- dummy is not used in this version of specification, it should
                 -- not be sent and if received it should be ignored.
                                                   DL-PDSCH-Information
                                                                                 OPTIONAL
                 dummy
            },
            tdd
                                          NULL
        dl-CommonInformation
                                          DL-CommonInformation-r4
                                                                                OPTIONAL.
        dl-InformationPerRL-List DL-InformationPerRL-List-r4
                                                                               OPTIONAL
}
RadioBearerRelease-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo
                                         IntegrityProtectionModeInfo
                                                                                 OPTIONAL.
        cipheringModeInfo
                                          CipheringModeInfo
                                                                                 OPTIONAL,
                                          ActivationTime
        activationTime
                                                                                 OPTIONAL,
        new-U-RNTI
                                          U-RNTI
                                                                                 OPTIONAL,
        new-C-RNTT
                                          C-RNTT
                                                                                 OPTIONAL,
         -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
        -- and if received the UE behaviour is unspecified
        new-DSCH-RNTI
                                 DSCH-RNTI
                                                                                 OPTIONAL,
        new-H-RNTI
                                          H-RNTI
                                                                                 OPTIONAL,
        rrc-StateIndicator
        rrc-StateIndicator RRC-StateIndicator, utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient Core network IEs
                                                                                OPTIONAL,
    -- Core network IEs
        cn-InformationInfo
                                          CN-InformationInfo
                                                                                 OPTIONAL.
        signallingConnectionRelIndication CN-DomainIdentity
                                                                                 OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity
                                          URA-Identity
                                                                                 OPTIONAL,
    -- Radio bearer IEs
        rab-InformationReconfigList RAB-InformationReconfigList
                                                                                OPTIONAL.
```

```
rb-InformationReleaseList RB-InformationAffectedList RB-InformationAffectedList
                                         RB-InformationAffectedList-r5
                                                                               OPTIONAL,
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                         UL-CommonTransChInfo-r4
                                                                               OPTIONAL,
                                       UL-DeletedTransChInfoList
        ul-deletedTransChInfoList
        ul-AddReconfTransChInfoList
                                         UL-AddReconfTransChInfoList
                                                                               OPTIONAL,
        -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification,
        -- they should not be sent and if received they should be ignored.
        dummy
                                         CHOICE {
            fdd
                                             SEQUENCE {
                dummv1
                                                  CPCH-SetID
                                                                               OPTIONAL.
                                                  DRAC-StaticInformationList OPTIONAL
                dummy2
            tdd
                                             NULL
                                                                               OPTIONAL,
                                                                               OPTIONAL,
        dl-CommonTransChInfo
                                         DL-CommonTransChInfo-r4
        dl-DeletedTransChInfoList
dl-AddReconfTransChInfoList
                                         DL-DeletedTransChInfoList-r5
                                                                               OPTIONAL,
                                         DL-AddReconfTransChInfoList-r5
                                                                               OPTIONAL.
    -- Physical channel IEs
        frequencyInfo
                                         FrequencyInfo
                                                                               OPTIONAL,
        maxAllowedUL-TX-Power
                                         MaxAllowedUL-TX-Power
                                                                               OPTIONAL,
        ul-ChannelRequirement
                                         UL-ChannelRequirement-r5
                                                                               OPTIONAL,
        modeSpecificPhysChInfo
                                         CHOICE {
                                             SEQUENCE {
            fdd
                -- dummy is not used in this version of specification, it should
                -- not be sent and if received it should be ignored.
                dummv
                                                  DL-PDSCH-Information
                                                                               OPTIONAL
            },
            tdd
                                         NULL
        dl-HSPDSCH-Information
                                         DL-HSPDSCH-Information
                                                                               OPTIONAL.
        dl-CommonInformation
                                         DL-CommonInformation-r5
                                                                               OPTIONAL,
        dl-InformationPerRL-List
                                         DL-InformationPerRL-List-r5
                                                                               OPTIONAL
}
RadioBearerRelease-v690ext-IEs ::= SEQUENCE {
    -- Core network IEs
        primary-plmn-Identity
                                                                               OPTIONAL,
                                         PLMN-Identity
    -- Physical channel IEs
        -- The IE harq-Preamble-Mode should not be used in the r3 and r4 versions of the message
        -- If included in the r3 or r4 version of the message, the UE should ignore the IE
                                        HARQ-Preamble-Mode
        harg-Preamble-Mode
                                                                               OPTIONAL,
        beaconPLEst
                                         BEACON-PL-Est
                                                                               OPTIONAL,
        postVerificationPeriod
                                         ENUMERATED { true }
                                                                               OPTIONAL,
        dhs-sync
                                         DHS-Svnc
                                                                               OPTIONAL,
        timingMaintainedSynchInd
                                         TimingMaintainedSynchInd
                                                                               OPTIONAL,
    -- MBMS TES
        mbms-PL-ServiceRestrictInfo
                                         MBMS-PL-ServiceRestrictInfo-r6
                                                                               OPTIONAL,
        mbms-RB-ListReleasedToChangeTransferMode
                                         RB-InformationReleaseList
                                                                               OPTIONAL
}
RadioBearerRelease-r6-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo
                                         IntegrityProtectionModeInfo
                                                                               OPTIONAL,
                                         CipheringModeInfo
                                                                               OPTIONAL,
        cipheringModeInfo
        activationTime
                                         ActivationTime
                                                                               OPTIONAL,
        new-U-RNTI
                                         U-RNTI
                                                                               OPTIONAL,
        new-C-RNTI
                                         C-RNTI
                                                                               OPTIONAL.
        -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
        -- and if received the UE behaviour is unspecified
        new-DSCH-RNTI
                                         DSCH-RNTI
                                                                               OPTIONAL,
        new-H-RNTI
                                         H-RNTI
                                                                               OPTIONAL,
        newPrimary-E-RNTI
                                         E-RNTI
                                                                               OPTIONAL.
        newSecondary-E-RNTI E-RNTI
rrc-StateIndicator RRC-StateIndicator,
utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLeng
                                                                               OPTIONAL,
                                         UTRAN-DRX-CycleLengthCoefficient
                                                                               OPTIONAL,
    -- Core network IEs
        cn-InformationInfo
                                         CN-InformationInfo-r6
                                                                               OPTIONAL.
        signallingConnectionRelIndication CN-DomainIdentity
                                                                               OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity
-- Radio bearer IEs
                                         URA-Identity
                                                                               OPTIONAL.
        \verb|rab-InformationReconfigList| & \verb|RAB-InformationReconfigList| \\
                                                                               OPTIONAL,
        rb-InformationReleaseList
rb-InformationReconfigList
                                         RB-InformationReleaseList,
                                         RB-InformationReconfigList-r6
                                                                               OPTIONAL.
        rb-InformationAffectedList
                                         RB-InformationAffectedList-r6
                                                                               OPTIONAL.
```

```
dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5
                                                                                OPTIONAL.
    -- Transport channel IEs
        ul-CommonTransChInfo
                                         UL-CommonTransChInfo-r4
                                                                                OPTIONAL,
        DeletedTransChInfoList
dl-AddReconfTransChInfoList
DL-DeletedTransChInfoList
DL-AddReconfTransChInfoList
DL-AddReconfTransChInfoList
DL-AddReconfTransChInfoList
DL-AddReconfTransChInfoList
DL-AddReconfTransChInfoList
        ul-deletedTransChInfoList
                                         UL-DeletedTransChInfoList-r6
                                                                                OPTIONAL,
                                          UL-AddReconfTransChInfoList-r6
                                                                                OPTIONAL,
                                         DL-DeletedTransChInfoList-r5
                                                                                OPTIONAL,
                                         DL-AddReconfTransChInfoList-r5
                                                                               OPTIONAL,
    -- Physical channel IEs
        frequencyInfo
                                          FrequencyInfo
                                                                                OPTIONAL,
        maxAllowedUL-TX-Power
                                          MaxAllowedUL-TX-Power
                                                                                OPTIONAL,
                                          UL-DPCH-Info-r6
        ul-DPCH-Info
                                                                                OPTIONAL.
        ul-EDCH-Information
                                         UL-EDCH-Information-r6
                                                                                OPTIONAL.
                                       DL-HSPDSCH-Information-r6
        dl-HSPDSCH-Information
                                                                                OPTIONAL,
        dl-CommonInformation
                                         DL-CommonInformation-r6
                                                                                OPTIONAL,
        dl-InformationPerRL-List
                                         DL-InformationPerRL-List-r6
                                                                                OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo
                                         MBMS-PL-ServiceRestrictInfo-r6
                                                                               OPTIONAL,
        mbms-RB-ListReleasedToChangeTransferMode
                                          RB-InformationReleaseList
                                                                                OPTIONAL
}
RadioBearerRelease-v6b0ext-IEs ::= SEQUENCE {
     - Physical channel IEs
        dl-InformationPerRL-List-v6b0ext
                                             DL-InformationPerRL-List-v6b0ext
                                                                                    OPTIONAL
}
RadioBearerRelease-r7-IEs ::= SEQUENCE {
    -- User equipment IEs
        \verb|integrityProtectionModeInfo|\\
                                          IntegrityProtectionModeInfo-r7
                                                                                OPTIONAL.
        cipheringModeInfo
                                          CipheringModeInfo-r7
                                                                                OPTIONAL,
                                          ActivationTime
        activationTime
        new-U-RNTI
                                          U-RNTI
                                                                                OPTIONAL,
        new-C-RNTI
                                          C-RNTI
                                                                                OPTIONAL.
        -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
        -- and if received the UE behaviour is unspecified
        new-DSCH-RNTI
                                         DSCH-RNTI
                                                                                OPTIONAL,
        new-H-RNTI
                                          H-RNTI
                                                                                OPTIONAL,
        newPrimary-E-RNTI
                                         E-RNTT
                                                                                OPTIONAL,
        newSecondary-E-RNTI
                                         E-RNTI
                                                                                OPTIONAL,
        rrc-StateIndicator
                                         RRC-StateIndicator,
        ueMobilityStateIndicator
                                         High-MobilityDetected
        utran-DRX-CycleLengthCoeff
                                       UTRAN-DRX-CycleLengthCoefficient-r7 OPTIONAL,
    -- Core network IEs
        cn-InformationInfo
                                         CN-InformationInfo-r6
                                                                                OPTIONAL,
        signallingConnectionRelIndication CN-DomainIdentity
                                                                                OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity
                                          URA-Identity
                                                                                OPTIONAL.
        supportForChangeOfUE-Capability BOOLEAN
                                                                                OPTIONAL,
    -- Radio bearer IEs
        rab-InformationReconfigList
                                         RAB-InformationReconfigList
                                                                                OPTIONAL,
        rb-InformationReleaseList
                                         RB-InformationReleaseList,
        rb-InformationReconfigList RB-InformationReconfigList-r7 rb-InformationAffectedList RB-InformationAffectedList-r7
                                                                                OPTIONAL,
                                                                                OPTIONAL.
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5
                                                                                OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                          UL-CommonTransChInfo-r4
                                                                                OPTIONAL,
        ul-deletedTransChInfoList
                                          UL-DeletedTransChInfoList-r6
        ul-AddReconfTransChInfoList
                                          UL-AddReconfTransChInfoList-r7
                                                                                OPTIONAL,
                                         DL-CommonTransChInfo-r4
        dl-CommonTransChInfo
                                                                                OPTIONAL.
        dl-DeletedTransChInfoList
                                                                                OPTIONAL,
                                         DL-DeletedTransChInfoList-r7
        dl-AddReconfTransChInfoList
                                          DL-AddReconfTransChInfoList-r7
                                                                                OPTIONAL,
    -- Physical channel IEs
        frequencyInfo
                                          FrequencyInfo
                                                                                OPTIONAL,
        multi-frequencyInfo
                                          Multi-frequencyInfo-LCR-r7
                                                                                OPTIONAL.
        dtx-drx-TimingInfo
                                          DTX-DRX-TimingInfo-r7
                                                                                OPTIONAL,
        dtx-drx-Info
                                          DTX-DRX-Info-r7
                                                                                OPTIONAL,
        hs-scch-LessInfo
                                         HS-SCCH-LessInfo-r7
                                                                                OPTIONAL,
        mimoParameters
                                          MIMO-Parameters-r7
                                                                                OPTIONAL.
        maxAllowedUL-TX-Power
                                         MaxAllowedUL-TX-Power
                                                                                OPTIONAL,
        ul-DPCH-Info
                                         UL-DPCH-Info-r7
        ul-EDCH-Information
                                          UL-EDCH-Information-r7
                                                                                OPTIONAL,
        dl-HSPDSCH-Information
                                         DL-HSPDSCH-Information-r7
                                                                                OPTIONAL,
        dl-CommonInformation
                                         DL-CommonInformation-r7
                                                                                OPTIONAL,
        dl-InformationPerRL-List
                                         DL-InformationPerRL-List-r7
                                                                                OPTIONAL,
        mbms-PL-ServiceRestrictInfo
                                         MBMS-PL-ServiceRestrictInfo-r6
                                                                               OPTIONAL.
        {\tt mbms-RB-ListReleasedToChangeTransferMode}
```

```
RB-InformationReleaseList
                                                                           OPTIONAL
}
{\tt RadioBearerRelease-v770ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
   -- User equipment IEs
      ueMobilityStateIndicator High-MobilityDetected
                                                                           OPTIONAL
}
RadioBearerRelease-v780ext-IEs ::= SEQUENCE {
   -- Physical channel IEs
      hs-DSCH-TBSizeTable
                                     HS-DSCH-TBSizeTable
                                                                           OPTIONAL
}
RadioBearerRelease-v7d0ext-IEs ::= SEQUENCE {
  lioBearerRelease v.a...

-- Physical channel IEs

-- UL-EDCH-Information-ext
                                                                           OPTIONAL
}
RadioBearerRelease-v7f0ext-IEs ::= SEQUENCE {
   -- Physical channel IEs
                                      MIMO-Parameters-v7f0ext
                                                                           OPTIONAL
   mimoParameters
RadioBearerRelease-v7g0ext-IEs ::= SEQUENCE {
   -- Physical channel IEs
                                       MIMO-Parameters-v7g0ext
                                                                           OPTIONAL
   mimoParameters
}
__ ***************
-- RADIO BEARER RELEASE COMPLETE
__ ****************
RadioBearerReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
       User equipment IEs
rrc-TransactionIdentifier RRC-TransactionIdentifier,
ul-IntegProtActivationInfo IntegrityProtActivationInfo
                                                                           OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
       ul-TimingAdvance UL-TimingAdvance
                                                                            OPTIONAL,
    -- Radio bearer IEs
       count-C-ActivationTime
                                       ActivationTime
                                                                           OPTIONAL.
        -- dummy is not used in this version of the specification and -- it should be ignored by the receiver.
       dummy RB-ActivationTimeInfoList
ul-CounterSynchronisationInfo
laterNonCriticalExtensions SEQUENCE {
-- Container for addition 3
                                                                            OPTIONAL,
                                                                            OPTIONAL,
            -- Container for additional R99 extensions
           radioBearerReleaseComplete-r3-add-ext BIT STRING OPTIONAL, v770NonCriticalExtensions SEQUENCE {
               radioBearerReleaseComplete-v770ext
                                               RadioBearerReleaseComplete-v770ext-IEs,
               nonCriticalExtensions
                                               SEQUENCE { } OPTIONAL
            } OPTIONAL
        ) OPTIONAL
}
RadioBearerReleaseComplete-v770ext-IEs ::= SEQUENCE {
       -- TABULAR: EXT-UL-TimingAdvance is applicable for TDD mode only.
       ext-UL-TimingAdvance EXT-UL-TimingAdvance OPTIONAL, deferredMeasurementControlReading ENUMERATED { true } OPTIONAL
}
__ ***************
-- RADIO BEARER RELEASE FAILURE
__ *****************
RadioBearerReleaseFailure ::= SEQUENCE {
    -- User equipment IEs
       User equipment IEs
rrc-TransactionIdentifier RRC-TransactionIdentifier,
failureCause FailureCauseWithProtErr,
    -- Radio bearer IEs
       potentiallySuccesfulBearerList RB-IdentityList
                                                                           OPTIONAL,
        -- Container for additional R99 extensions
                                                   BIT STRING OPTIONAL,
            radioBearerReleaseFailure-r3-add-ext
```

```
nonCriticalExtensions
                                                                                  SEQUENCE { } OPTIONAL
                     OPTIONAL
}
    **************
-- RADIO BEARER SETUP
__ ***************
RadioBearerSetup ::= CHOICE {
                                                                     SEQUENCE {
                radioBearerSetup-r3 RadioBearerSetup-r3-IEs,
v3a0NonCriticalExtensions SEQUENCE {
                       radioBearerSetup-v3a0ext RadioBearerSetup-v3a0ext, laterNonCriticalExtensions SEQUENCE {
                                -- Container for additional R99 extensions
                               OPTIONAL,
                                       radioBearerSetup-v5d0ext RadioBearerSetup-v5d0ext-IEs, v690NonCriticalExtensions SEQUENCE {
                                                                                                                   RadioBearerSetup-v690ext-IEs,
                                                              radioBearerSetup-v690ext
                                                              nonCriticalExtensions
                                                                                                                              SEQUENCE {} OPTIONAL
                                                              OPTIONAL
                                                       OPTIONAL
                                               OPTIONAL.
                                       OPTIONAL
                               OPTIONAL
                     OPTIONAL
                                                                      SEQUENCE {
        later-than-r3
                                                                     RRC-TransactionIdentifier,
                rrc-TransactionIdentifier
               criticalExtensions
                                                                             CHOICE {
                                                                             SEQUENCE {
                               v4d0NonCriticalExtensions SECTIFMOR (
                                         - Container for adding non critical extensions after freezing REL-5
                                       radioBearerSetup-r4-add-ext BIT STRING
v590NonCriticalExtensions SEQUENCE {
   radioBearerSetup-v590ext RadioBe
                                                                                                                                  OPTIONAL,
                                               radioDearerSetup-v5d0ext RadioBearerSetup-v5d0ext-IEs, v690NonCriticalExtensions SEOUENCE SEO
                                                               radioBearerSetup-v690ext RadioBearerSetup-v690ext-IEs,
                                                                                                                                                        OPTIONAL
                                                              nonCriticalExtensions
                                                                                                                              SEQUENCE {}
                                                             OPTIONAL
                                                       OPTIONAL
                                               OPTIONAL
                                       OPTIONAL
                       criticalExtensions
                                                                                      CHOICE {
                                                                                          SEQUENCE {
                                       radioBearerSetup-r5
                                                                                              RadioBearerSetup-r5-IEs,
                                        -- Container for adding non critical extensions after freezing REL-6
                                       radioBearerSetup-r5-add-ext BIT STRING OPTIONAL,
v5d0NonCriticalExtenstions SEQUENCE {
   radioBearerSetup-v5d0ext RadioBearerSetup-v5d0ext-IEs,
   v690NonCriticalExtensions SEQUENCE {
                                                       radioBearerSetup-v690ext RadioBearerSetup-v690ext-IEs,
                                                       nonCriticalExtensions
                                                                                                                     SEQUENCE {}
                                                                                                                                                   OPTIONAL
                                                     OPTIONAL
                                       }
                                               OPTIONAL
                               criticalExtensions
                                                                                              CHOICE {
                                               SEQUENCE {
radioBearerSetup-r6
RadioBearerSetup-r6-IEs,
                                                -- Container for adding non critical extensions after freezing REL-7
                                               radioBearerSetup-r6-add-ext BIT STRING OPTIONAL, v6b0NonCriticalExtensions SEQUENCE {
                                                       radioBearerSetup-v6b0ext RadioBearerSetup-v6b0ext-IEs,
                                                       nonCriticalExtensions
                                                                                                                     SEQUENCE {}
                                                                                                                                                    OPTIONAL
                                                     OPTIONAL
                                        criticalExtensions
                                                                                                   CHOICE {
```

```
SEQUENCE {
                                                               RadioBearerSetup-r7-IEs,
                              radioBearerSetup-r7
                              -- Container for adding non critical extensions after freezing REL-8
                             radioBearerSetup-r7-add-ext BIT STRING
                                          (CONTAINING RadioBearerSetup-r7-add-ext-IEs)
                                                                                             OPTIONAL,
                              v780NonCriticalExtensions SEQUENCE {
                                  radioBearerSetup-v780ext
                                                                    RadioBearerSetup-v780ext-IEs,
                                  nonCriticalExtensions
                                                                    SEQUENCE {}
                                                                                     OPTIONAL
                                 OPTIONAL
                                                          SEQUENCE {}
                         criticalExtensions
                     }
       }
    }
}
RadioBearerSetup-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier
                                          RRC-TransactionIdentifier,
        integrityProtectionModeInfo
                                          IntegrityProtectionModeInfo
                                                                                 OPTIONAL,
        cipheringModeInfo
                                          CipheringModeInfo
                                                                                 OPTIONAL,
        activationTime
                                          ActivationTime
                                                                                 OPTIONAL.
        new-II-RNTT
                                          U-RNTT
                                                                                 OPTIONAL.
        new-C-RNTT
                                          C-RNTT
                                                                                 OPTIONAL,
        rrc-StateIndicator
                                          RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff
                                         UTRAN-DRX-CycleLengthCoefficient
                                                                               OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity
                                          URA-Identity
                                                                                 OPTIONAL.
    -- Core network IEs
                                         CN-InformationInfo
        cn-InformationInfo
                                                                                 OPTIONAL,
    -- Radio bearer IEs
        srb-InformationSetupListSRB-InformationSetupListrab-InformationSetupListRAB-InformationSetupListrb-InformationAffectedListRB-InformationAffectedList
                                                                                 OPTIONAL.
                                                                                 OPTIONAL,
                                          RB-InformationAffectedList
                                                                                 OPTIONAL,
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo
                                                                                OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                        UL-CommonTransChInfo
                                                                                OPTIONAL,
        ul-deletedTransChInfoList UL-DeletedTransChInfoList ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList
                                                                                OPTIONAL,
                                                                                 OPTIONAL,
        -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification,
        -- they should not be sent and if received they should be ignored.
        dummy
                                          CHOICE {
            fdd
                                              SEQUENCE {
                 dummy1
                                                   CPCH-SetID
                                                                                 OPTIONAL,
                 dummy2
                                                   DRAC-StaticInformationList OPTIONAL
            },
            tdd
                                              NULL
                                                                                 OPTIONAL,
        dl-CommonTransChInfo
dl-DeletedTransChInfoList
dl-AddReconfTransChInfoList
DL-AddReconfTransChInfoList
                                                                                 OPTIONAL,
                                                                                 OPTIONAL.
                                                                                OPTIONAL,
    -- Physical channel IEs
        frequencyInfo
                                          FrequencyInfo
                                                                                OPTIONAL,
        maxAllowedUL-TX-Power
ul-ChannelRequirement
                                          MaxAllowedUL-TX-Power
                                                                                 OPTIONAL,
                                          UL-ChannelRequirement
                                                                                 OPTIONAL,
        modeSpecificPhysChInfo
                                         CHOICE {
                                              SEQUENCE {
                 -- dummy is not used in this version of specification, it should
                 -- not be sent and if received it should be ignored.
                                                   DL-PDSCH-Information
                                                                                 OPTIONAL
                 dummy
            },
            tdd
                                              NULL
        dl-CommonInformation
                                         DL-CommonInformation
                                                                                 OPTIONAL.
        dl-InformationPerRL-List
                                          DL-InformationPerRL-List
                                                                                 OPTIONAL
}
RadioBearerSetup-v3a0ext ::= SEQUENCE {
    -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received the UE behaviour
    -- is unspecified
    new-DSCH-RNTI
                                     DSCH-RNTI
                                                                            OPTIONAL
}
RadioBearerSetup-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- dummy is not used in this version of the specification, it should
```

```
-- not be sent and if received it should be ignored.
                                                SSDT-UL
                                                                                        OPTIONAL,
         -- The order of the RLs in IE cell-id-PerRL-List is the same as
         -- in IE DL-InformationPerRL-List included in this message
         cell-id-PerRL-List
                                                CellIdentity-PerRL-List
                                                                                       OPTIONAL
}
{\tt RadioBearerSetup-v590ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List DL-TPC-PowerOffsetPerRL-List
                                                                                  OPTIONAL
}
RadioBearerSetup-v5d0ext-IEs ::= SEQUENCE {
    --Radio Bearer IEs
        pdcp-ROHC-TargetMode
                                            PDCP-ROHC-TargetMode
                                                                                   OPTIONAL
}
RadioBearerSetup-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo
                                            IntegrityProtectionModeInfo
                                                                                    OPTIONAL,
                                            CipheringModeInfo
         cipheringModeInfo
                                                                                    OPTIONAL,
         activationTime
                                            ActivationTime
                                                                                    OPTIONAL,
        new-U-RNTI
                                            U-RNTI
                                                                                    OPTIONAL,
        new-C-RNTI
                                            C-RNTI
         -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
         -- the UE behaviour is unspecified
         new-DSCH-RNTI
                                         DSCH-RNTI
                                                                                    OPTIONAL,
         rrc-StateIndicator
                                           RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity
                                           URA-Identity
                                                                                    OPTIONAL.
    -- Core network IEs
        cn-InformationInfo
                                           CN-InformationInfo
                                                                                    OPTIONAL,
    -- Radio bearer IEs
        srb-InformationSetupListSRB-InformationSetupListrab-InformationSetupListRAB-InformationSetupList-r4rb-InformationAffectedListRB-InformationAffectedList
                                                                                    OPTIONAL.
                                                                                    OPTIONAL,
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo
                                                                                  OPTIONAL,
    -- Transport channel IEs
         ul-CommonTransChInfo
                                           UL-CommonTransChInfo-r4
                                                                                   OPTIONAL,
         ul-deletedTransChInfoList
        ul-deletedTransChInfoList UL-DeletedTransChInfoList ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList
                                                                                    OPTIONAL.
         -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification,
         -- they should not be sent and if received they should be ignored.
         dummy
                                            CHOICE {
             fdd
                                                SEQUENCE {
                 dummv1
                                                     CPCH-SetID
                                                                                    OPTIONAL.
                 dummy2
                                                     DRAC-StaticInformationList OPTIONAL
             },
             tdd
                                                NULL
                                                                                    OPTIONAL,
        dl-CommonTransChInfo DL-CommonTransChInfo-r4
dl-DeletedTransChInfoList DL-DeletedTransChInfoList
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4
                                                                                    OPTIONAL,
                                                                                    OPTIONAL,
                                                                                   OPTIONAL,
    -- Physical channel IEs
        .__quencyinfo
maxAllowedUL-TX-Power
ul-ChannelRequirement
modeSpecificPhysChInfo
                                           FrequencyInfo
                                                                                    OPTIONAL.
                                            MaxAllowedUL-TX-Power
                                                                                    OPTIONAL,
                                          UL-ChannelRequirement-r4
                                                                                    OPTIONAL,
                                          CHOICE {
                                                SEQUENCE {
             fdd
                 -- dummy is not used in this version of specification, it should
                  -- not be sent and if received it should be ignored.
                                                    DL-PDSCH-Information
             },
                                                NITIT.T.
             tdd
                                         DL-CommonInformation-r4
DL-InformationPerRL-List-r4
         dl-CommonInformation
                                                                                    OPTIONAL,
        dl-InformationPerRL-List
                                                                                    OPTIONAL
}
RadioBearerSetup-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo
                                            IntegrityProtectionModeInfo
                                                                                    OPTIONAL,
         cipheringModeInfo
                                            CipheringModeInfo
                                                                                    OPTIONAL,
         activationTime
                                            ActivationTime
                                                                                    OPTIONAL,
        new-U-RNTI
                                            U-RNTI
         new-C-RNTI
                                            C-RNTI
                                                                                    OPTIONAL.
         -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
```

```
-- the UE behaviour is unspecified
        new-DSCH-RNTI
                                           DSCH-RNTI
                                                                                  OPTIONAL,
        new-H-RNTI
                                          H-RNTI
                                                                                  OPTIONAL,
        rrc-StateIndicator
                                           RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff
                                           UTRAN-DRX-CycleLengthCoefficient
                                                                                  OPTIONAL.
    -- UTRAN mobility IEs
    ura-Identity
-- Core network IEs
                                          URA-Identity
                                                                                  OPTIONAL.
        cn-InformationInfo
                                           CN-InformationInfo
                                                                                  OPTIONAL,
    -- Radio bearer IEs
        rab-InformationSetupList SRB-InformationSetupList-r5
rab-InformationSetupList RAB-InformationSetupList-r5
rb-InformationAffectedList RB-InformationAffectedList-r5
                                                                                  OPTIONAL.
                                                                                  OPTIONAL.
                                                                                  OPTIONAL.
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                          UL-CommonTransChInfo-r4
                                                                                  OPTIONAL,
        ul-deletedTransChInfoList UL-DeletedTransChInfoList ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList
                                                                                  OPTIONAL.
                                                                                  OPTIONAL
         -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification,
         -- they should not be sent and if received they should be ignored.
                                          CHOICE {
        dummy
             fdd
                                                SEQUENCE {
                 dummy1
                                                    CPCH-SetID
                                                                                  OPTIONAL,
                 dummy2
                                                    DRAC-StaticInformationList OPTIONAL
             },
             tdd
                                               NULL
                                                                                  OPTIONAL,
         dl-CommonTransChInfo
                                          DL-CommonTransChInfo-r4
        dl-CommonTransChInfo DL-CommonTransChInfo-r4
dl-DeletedTransChInfoList DL-DeletedTransChInfoList-r5
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5
                                                                                  OPTIONAL,
                                                                                  OPTIONAL,
                                                                                 OPTIONAL.
    -- Physical channel IEs
        frequencyInfo
                                          FrequencyInfo
        maxAllowedUL-TX-Power MaxAllowe ul-ChannelRequirement UL-ChannelmodeSpecificPhysChInfo CHOICE {
                                          MaxAllowedUL-TX-Power
                                                                                  OPTIONAL,
                                          UL-ChannelRequirement-r5
                                                                                  OPTIONAL.
             fdd
                                              SEQUENCE {
                 -- dummy is not used in this version of specification, it should
                 -- not be sent and if received it should be ignored.
                                                    DL-PDSCH-Information
                 dummv
             },
             tdd
                                               NULL
        dl-HSPDSCH-Information DL-HSPDSCH-Information
                                                                                 OPTIONAL.
        dl-CommonInformation
                                          DL-CommonInformation-r5
                                                                                  OPTIONAL,
                                        DL-InformationPerRL-List-r5
        dl-InformationPerRL-List
                                                                                 OPTIONAL
}
RadioBearerSetup-v690ext-IEs ::= SEQUENCE {
    -- Core network IEs
        primary-plmn-Identity
                                         PLMN-Identity
                                                                                  OPTIONAL,
    -- Physical channel IEs
        -- The IE harq-Preamble-Mode should not be used in the r3 and r4 versions of the message
         -- If included in the r3 or r4 version of the message, the UE should ignore the IE
                                           HARQ-Preamble-Mode
        harq-Preamble-Mode
        beaconPLEst
                                          BEACON-PL-Est
                                                                                  OPTIONAL,
                                          ENUMERATED { true }
        postVerificationPeriod
                                                                                  OPTIONAL.
        dhs-sync
                                           DHS-Sync
                                                                                  OPTIONAL.
        timingMaintainedSynchInd
                                          TimingMaintainedSynchInd
    -- Radio bearer IEs
        rab-InformationSetupList
                                         RAB-InformationSetupList-r6-ext
                                                                                 OPTTONAL.
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo
                                          MBMS-PL-ServiceRestrictInfo-r6
                                                                                  OPTIONAL
}
RadioBearerSetup-r6-IEs ::= SEQUENCE {
     -- User equipment IEs
        integrityProtectionModeInfo
                                           IntegrityProtectionModeInfo
                                                                                  OPTIONAL,
        cipheringModeInfo
                                           CipheringModeInfo
                                                                                  OPTIONAL,
        activationTime
                                           ActivationTime
                                                                                  OPTIONAL.
        new-U-RNTI
                                           II-RNTT
                                                                                  OPTIONAL,
        new-C-RNTI
                                           C-RNTI
                                                                                  OPTIONAL,
         -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
         -- and if received the UE behaviour is unspecified
        new-DSCH-RNTI
                                          DSCH-RNTI
                                                                                  OPTIONAL,
        new-H-RNTI
                                           H-RNTI
                                                                                  OPTIONAL,
        newPrimary-E-RNTI
                                                                                  OPTIONAL,
                                          E-RNTI
        newSecondary-E-RNTI
                                          E-RNTI
                                                                                  OPTIONAL.
                                           RRC-StateIndicator,
        rrc-StateIndicator
```

```
utran-DRX-CycleLengthCoeff
                                             UTRAN-DRX-CycleLengthCoefficient
                                                                                          OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity
                                               URA-Identity
                                                                                          OPTIONAL,
    -- Core network IEs
         cn-InformationInfo
                                               CN-InformationInfo-r6
                                                                                          OPTIONAL,
         specificationMode
                                               CHOICE {
                                                    SEQUENCE {
              complete
              -- Radio bearer IEs
                   srb-InformationSetupList
                                                         SRB-InformationSetupList-r6
                                                                                                    OPTIONAL,
                   rab-InformationSetupList
                                                         RAB-InformationSetupList-r6
                                                                                                    OPTIONAL,
                  rab-InformationReconfigList
rb-InformationReconfigList
rb-InformationReconfigList
rb-InformationAffectedList
rb-InformationAffectedList
RAB-InformationReconfigList
RB-InformationAffectedList-r6
RB-InformationAffectedList-r6
                                                                                                    OPTIONAL,
                                                                                                    OPTIONAL,
                                                        RB-InformationAffectedList-r6
                                                                                                    OPTIONAL,
                   dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5
                                                                                                    OPTIONAL,
                  pdcp-ROHC-TargetMode
                                                        PDCP-ROHC-TargetMode
                                                                                                    OPTIONAL,
              -- Transport channel IEs
                  ul-CommonTransChInfoUL-CommonTransChInfo-r4ul-deletedTransChInfoListUL-DeletedTransChInfoList-r6ul-AddReconfTransChInfoListUL-AddReconfTransChInfoList-r6dl-CommonTransChInfoDL-CommonTransChInfo-r4dl-DeletedTransChInfoListDL-DeletedTransChInfoList-r5dl-AddReconfTransChInfoListDL-AddReconfTransChInfoList-r5
                  ul-CommonTransChInfo
                                                        UL-CommonTransChInfo-r4
                                                                                                    OPTIONAL,
                                                                                                    OPTIONAL,
                                                                                                    OPTIONAL,
                                                                                                    OPTIONAL,
                                                                                                    OPTIONAL
              -- dummy is not used in this version of the specification
              -- if it is sent, the UE behaviour is unspecified.
                                      SEQUENCE {
              dummy
                  rab-Info
                                                       RAB-Info-r6,
                   defaultConfigMode
                                                         DefaultConfigMode,
                  defaultConfigIdentity
                                                       DefaultConfigIdentity-r6,
                  defaultConfigIdentity DefaultConfigIdentity-r6,
rb-InformationChangedList RB-InformationChangedList-r6 OPTIONAL,
powerOffsetInfoShort PowerOffsetInfoShort
                  powerOffsetInfoShort
                                                        PowerOffsetInfoShort
              }
         },
    -- Physical channel IEs
         frequencyInfo
                                              FrequencyInfo
                                                                                          OPTIONAL.
         maxAllowedUL-TX-Power
                                               MaxAllowedUL-TX-Power
                                                                                          OPTIONAL,
         ul-DPCH-Info
                                              UL-DPCH-Info-r6
                                                                                          OPTIONAL,
         ul-EDCH-Information
                                              UL-EDCH-Information-r6
                                                                                          OPTIONAL,
         dl-HSPDSCH-Information DL-HSPDSCH-Information-r6 dl-CommonInformation DL-CommonInformation-r6
                                                                                         OPTIONAL,
                                                                                          OPTIONAL,
         dl-InformationPerRL-List
                                              DL-InformationPerRL-List-r6
                                                                                          OPTIONAL.
    -- MBMS IEs
         mbms-PL-ServiceRestrictInfo MBMS-PL-ServiceRestrictInfo-r6
                                                                                         OPTIONAL
}
RadioBearerSetup-v6b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
         dl-InformationPerRL-List-v6b0ext DL-InformationPerRL-List-v6b0ext OPTIONAL,
    -- MBMS IEs
        -- The order of the RABs in IE rab-InformationSetupListExt is the same as
         -- in IE rab-InformationSetupList that is included in this message
         rab-InformationSetupListExt
                                             RAB-InformationSetupList-v6b0ext
}
RadioBearerSetup-r7-IEs ::= SEQUENCE {
     -- User equipment IEs
         integrityProtectionModeInfo
                                               IntegrityProtectionModeInfo-r7
                                                                                          OPTIONAL,
         cipheringModeInfo
                                               CipheringModeInfo-r7
                                                                                          OPTIONAL,
         activationTime
                                               ActivationTime
                                                                                          OPTIONAL,
         new-U-RNTI
                                               U-RNTT
                                                                                          OPTIONAL.
         new-C-RNTI
                                               C-RNTI
                                                                                          OPTIONAL,
         -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
         -- and if received the UE behaviour is unspecified
         new-DSCH-RNTI
                                               DSCH-RNTI
                                                                                          OPTIONAL,
         new-H-RNTI
                                               H-RNTI
                                                                                          OPTIONAL,
                                             E-RNTI
                                                                                           OPTIONAL,
         newPrimary-E-RNTI
         newPrimary-E-RNTI E-RNTI OPTIONAL,
newSecondary-E-RNTI E-RNTI OPTIONAL,
rrc-StateIndicator RRC-StateIndicator,
utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient-r7 OPTIONAL,
    -- UTRAN mobility IEs
                                              URA-Identity
         ura-Identity
         supportForChangeOfUE-Capability BOOLEAN
                                                                                          OPTIONAL,
    -- Core network IEs
         cn-InformationInfo
                                               CN-InformationInfo-r6
                                                                                          OPTIONAL,
         cn-InformationInfo
specificationMode
                                               CHOICE {
                                                  SEQUENCE {
              -- Radio bearer IEs
                  srb-InformationSetupList
                                                        SRB-InformationSetupList-r7
                                                                                                   OPTIONAL,
```

```
rab-InformationSetupList
rab-InformationReconfigList
rb-InformationAffectedList
dl-CounterSymphysis
                                                                  RAB-InformationSetupList-r7
RAB-InformationReconfigList
                                                                                                                    OPTIONAL,
                                                                                                                    OPTIONAL,
                                                                 RB-InformationReconfigList-r7
RB-InformationAffectedList-r7
                                                                                                                   OPTIONAL,
                                                                                                                   OPTIONAL,
                      dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5
                                                                                                                    OPTIONAL.
                      pdcp-ROHC-TargetMode
                                                        PDCP-ROHC-TargetMode
                                                                                                                   OPTIONAL,
                 -- Transport channel IEs
                     ul-CommonTransChInfoUL-CommonTransChInfo-r4OPTIONAL,ul-deletedTransChInfoListUL-DeletedTransChInfoList-r6OPTIONAL,ul-AddReconfTransChInfoListUL-AddReconfTransChInfoList-r7OPTIONAL,dl-CommonTransChInfoDL-CommonTransChInfo-r4OPTIONAL,dl-DeletedTransChInfoListDL-DeletedTransChInfoList-r7OPTIONAL,dl-AddReconfTransChInfoListDL-AddReconfTransChInfoList-r7OPTIONAL
                      ul-CommonTransChInfo
                                                                  UL-CommonTransChInfo-r4
                                                                                                                    OPTIONAL.
                 -- dummy is not used in this version of the specification
                 -- if it is sent, the UE behaviour is unspecified.
                dummv
                                                            NULL
     -- Physical channel IEs
          frequencyInfo
multi-frequencyInfo
Multi-frequencyInfo-LCR-r7
dtx-drx-TimingInfo
dtx-drx-Info
DTX-DRX-TimingInfo-r7
DTX-DRX-Info-r7
hs-scch-LessInfo
MIMO-Parameters-r7
maxAllowedUL-TX-Power
ul-DPCH-Info
UL-DPCH-Info-r7
ul-EDCH-Information
dl-HSPDSCH-Information
dl-HSPDSCH-Information
dl-CommonInformation
dl-Information
DL-CommonInformation-r7
dl-InformationPerRL-List
MBMS IES
           frequencyInfo
          frequencyInto
multi-frequencyInfo
                                                      FrequencyInfo
                                                                                                        OPTIONAL,
                                                                                                    OPTIONAL,
OPTIONAL,
OPTIONAL,
                                                                                                       OPTIONAL,
                                                                                                        OPTIONAL.
                                                                                                        OPTIONAL,
                                                                                                        OPTIONAL,
                                                                                                       OPTIONAL,
                                                                                                        OPTIONAL.
                                                                                                        OPTIONAL,
     -- MBMS IEs
          mbms-PL-ServiceRestrictInfo MBMS-PL-ServiceRestrictInfo-r6
                                                                                                       OPTIONAL
}
RadioBearerSetup-r7-add-ext-IEs ::= SEQUENCE {
          radioBearerSetup-v7d0ext RadioBearerSetup-v7d0ext-IEs
v7f0NonCriticalExtensions SEQUENCE {
                ONOnCriticalExtensions SEQUENCE {
radioBearerSetup-v7f0ext RadioBearerSetup-v7f0ext-IEs,
v7g0NonCriticalExtensions SEQUENCE {
                     radioBearerSetup-v7g0ext RadioBearerSetup-v7g0ext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
                     OPTIONAL
                OPTIONAL
}
RadioBearerSetup-v780ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
          hs-DSCH-TBSizeTable
                                                    HS-DSCH-TBSizeTable
                                                                                                       OPTIONAL
}
RadioBearerSetup-v7d0ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
                                             UL-EDCH-Information-ext
          ul-EDCH-Information
                                                                                               OPTIONAL
}
RadioBearerSetup-v7f0ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
     mimoParameters
                                                       MIMO-Parameters-v7f0ext
                                                                                                       OPTIONAL
}
RadioBearerSetup-v7g0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
     mimoParameters
                                                                                                       OPTIONAL
                                                       MIMO-Parameters-v7q0ext
}
__ **************
-- RADIO BEARER SETUP COMPLETE
__ ****************
RadioBearerSetupComplete ::= SEQUENCE {
     -- User equipment IEs
           rrc-TransactionIdentifier
          rrc-TransactionIdentifier RRC-TransactionIdentifier, ul-IntegProtActivationInfo IntegrityProtActivationInfo
                                                                                                        OPTIONAL,
           -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
                                                                                                         OPTIONAL,
                                                      UL-TimingAdvance
           ul-TimingAdvance
```

```
start-Value
                                                             START-Value
                                                                                                                                                          OPTIONAL,
        -- Radio bearer IEs
               count-C-ActivationTime
                                                                             ActivationTime
                                                                                                                                                         OPTIONAL,
                -- dummy is not used in this version of the specification and
               dummy RB-ActivationTimeInfoList OPTIONAL, ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo OPTIONAL, laterNonCriticalExtensions SEQUENCE {
-- Container for additional Pool and the second of the second 
                        radioBearerSetupComplete-r3-add-ext BIT STRING OPTIONAL,
                        v770NonCriticalExtensions SEQUENCE {
                                radioBearerSetupComplete-v770ext
                                                                                                RadioBearerSetupComplete-v770ext-IEs,
                               nonCriticalExtensions
                                                                                                 SEQUENCE {} OPTIONAL
                              OPTIONAL
                ) OPTIONAL
}
RadioBearerSetupComplete-v770ext-IEs ::= SEQUENCE {
               -- TABULAR: EXT-UL-TimingAdvance is applicable for TDD mode only.
               ext-UL-TimingAdvance EXT-UL-TimingAdvance OPTIONAL, deferredMeasurementControlReading ENUMERATED { true } OPTIONAL
}
__ ***************
-- RADIO BEARER SETUP FAILURE
__ ************************
RadioBearerSetupFailure ::= SEQUENCE {
       -- User equipment IEs
              User equipment IEs
rrc-TransactionIdentifier RRC-TransactionIdentifier,
failureCause FailureCauseWithProtErr,
        -- Radio bearer IEs
               OPTIONAL,
                       -- Container for additional R99 extensions
                       radioBearerSetupFailure-r3-add-ext BIT STRING OPTIONAL,
                       nonCriticalExtensions SEQUENCE {}
                                                                                                                   OPTIONAL
                     OPTIONAL
}
__ ****************************
-- RRC CONNECTION REJECT
__ ***************
RRCConnectionReject ::= CHOICE {
               SEQUENCE {
rrcConnectionReject-r3
laterNegGet:
               -- Container for additional R99 extensions
                       rrcConnectionReject-r3-add-ext BIT STRING OPTIONAL,
v690NonCriticalExtensions SEQUENCE {
   rrcConnectionReject-v690ext RRCConnectionReject-v690ext-IEs,
   v6f0NonCriticalExtensions SEQUENCE {
                                       rrcConnectionReject-v6f0ext RRCConnectionReject-v6f0ext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
                                     OPTIONAL
                              OPTIONAL
               ) OPTIONAL
               er-than-r3 SEQUENCE {
initialUE-Identity Initial
rrg-Transaction:
        later-than-r3
               initialUE-Identity
rrc-TransactionIdentifier
criticalExtensions
InitialUE-Identity,
RRC-TransactionIden
SEQUENCE {}
                                                                               RRC-TransactionIdentifier,
}
RRCConnectionReject-r3-IEs ::= SEQUENCE {
        -- TABULAR: Integrity protection shall not be performed on this message.
               initialUE-Identity InitialUE-Identity,
rrc-TransactionIdentifier RRC-TransactionIdentifier,
rejectionCause RejectionCause,
waitTime
        -- User equipment IEs
                waitTime
                                                                                WaitTime,
```

```
redirectionInfo
                                                                                                                     RedirectionInfo
                                                                                                                                                                                                                                       OPTIONAL
}
RRCConnectionReject-v690ext-IEs ::= SEQUENCE {
            redirectionInfo-v690ext
                                                                                                                         GSM-TargetCellInfoList
                                                                                                                                                                                                                       OPTIONAL
RRCConnectionReject-v6f0ext-IEs ::= SEQUENCE {
           countingCompletion
                                                                                                                         ENUMERATED { true }
                                                                                                                                                                                                                                      OPTIONAL
__ ***************
-- RRC CONNECTION RELEASE
__ ************************
RRCConnectionRelease ::= CHOICE {
                        RRCConnectionRelease-r3-IEs, laterNonCriticalExtensions
-- Contains SEQUENCE /
                                                                                                            SEQUENCE {
                                     -- Container for additional R99 extensions
                                    OPTIONAL,
                                               rrcConnectionRelease-v690ext RRCConnectionRelease-v690ext-IEs,
v770NonCriticalExtensions SEQUENCE {
    rrcConnectionRelease-v770ext RRCConnectionRelease-v770ext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
                                                       OPTIONAL
                                               OPTIONAL
                        ) OPTIONAL
                       er-than-r3

SEQUENCE {

rrc-TransactionIdentifier RRC-TransactionIdentifier,

criticalExtensions CHOICE {

r4

SEQUENCE {

rrcConnectionRelease-r4

v4d0NonCriticalExtensions SEQUENCE {

SEQUENCE {

RRCConnectionRelease-r4-IEs,

v4d0NonCriticalExtensions SEQUENCE {

RRCConnectionRelease-r4-IEs,

v4d0NonCriticalExtensions SEQUENCE {

RRCCOnnectionRelease-r4-IEs,

v4d0NonCriticalExtensions SEQUENCE {

RRCCOnnectionRelease-r4-IEs,

v4d0NonCriticalExtensions SEQUENCE {

RRCCOnnectionRelease-r4-IEs,

v4d0NonCriticalExtensions SEQUENCE {

RRCCOnnectionRelease-r4-IEs,

v4d0NonCriticalExtensions SEQUENCE {

RRCCOnnectionRelease-r4-IEs,

v4d0NonCriticalExtensions SEQUENCE {

RRCCOnnectionRelease-r4-IEs,

recconnectionRelease-r4-IEs,

recconnectionRelease-r
            later-than-r3
                                                               -- Container for adding non critical extensions after freezing REL-6
                                                                        OPTIONAL,
SEQUENCE {
rrcConnectionRelease-v690ext
v770NonCriticalExtensions
rrcConnectionRelease-v690ext-IEs,
sequence {
rrcConnectionRelease-v690ext-IEs,
s
                                                             rrcConnectionRelease-r4-add-ext BIT STRING OPTIONAL,
                                                             v690NonCriticalExtensions
                                                                                      rrcConnectionRelease-v770ext RRCConnectionRelease-v770ext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
                                                                                     nonCriticalExtensions
                                                                                    OPTIONAL
                                                                         OPTIONAL
                                                ) OPTIONAL
                                    criticalExtensions SEQUENCE {}
                       }
           }
}
RRCConnectionRelease-r3-IEs ::= SEQUENCE {
            -- User equipment IEs
                      rrc-TransactionIdentifier
                                                                                                                        RRC-TransactionIdentifier,
                        -- n-308 is conditional on the UE state
                        n-308
                                                                                                                        N-308
                                                                                                                                                                                                                                       OPTIONAL,
                        releaseCause
                                                                                                                          ReleaseCause,
                                                                                                                         Rplmn-Information
                        rplmn-information
                                                                                                                                                                                                                                         OPTIONAL
}
RRCConnectionRelease-r4-IEs ::= SEQUENCE {
            -- User equipment IEs
                        -- n-308 is conditional on the UE state.
                        n-308
                                                                                                                         N - 308
                                                                                                                                                                                                                                        OPTIONAL.
                        releaseCause
                                                                                                                           ReleaseCause,
                                                                                                                          Rplmn-Information-r4
                                                                                                                                                                                                                                        OPTIONAL
                       rplmn-information
}
RRCConnectionRelease-v690ext-IEs ::= SEQUENCE {
                      redirectionInfo-v690ext
                                                                                                                RedirectionInfo-r6
                                                                                                                                                                                                                                         OPTIONAL
}
RRCConnectionRelease-v770ext-IEs ::= SEQUENCE {
            -- User equipment IEs
                        ueMobilityStateIndicator High-MobilityDetected
                                                                                                                                                                                                                                       OPTIONAL
```

```
}
__ *******************
-- RRC CONNECTION RELEASE for CCCH
RRCConnectionRelease-CCCH ::= CHOICE {
                                  SEQUENCE {
       rrcConnectionRelease-CCCH-r3 RRCConnectionRelease-CCCH-r3-IEs, laterNonCriticalExtensions SEQUENCE {
            -- Container for additional R99 extensions
            rrcConnectionRelease-CCCH-r3-add-ext
                                                       BIT STRING
           v690NonCriticalExtensions SEQUENCE {
               rrcConnectionRelease-v690ext RRCConnectionRelease-CCCH-v690ext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
              OPTIONAL
           OPTIONAL
    later-than-r3
                                   SEQUENCE {
                                   U-RNTI,
RRC-TransactionIdentifier,
        u-RNTI
       rrc-TransactionIdentifier
       criticalExtensions CHOICE {

r4 SEQUENCE {
                rrcConnectionRelease-CCCH-r4 RRCConnectionRelease-CCCH-r4-IEs,
                v4d0NonCriticalExtensions
                                               SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    rrcConnectionRelease-CCCH-r4-add-ext BIT STRING OPTIONAL,
                    v690NonCriticalExtensions SEQUENCE {
                       rrcConnectionRelease-v690ext RRCConnectionRelease-CCCH-v690ext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
                    } OPTIONAL
                       OPTIONAL
                                           SECUENCE {
            criticalExtensions
                -- TABULAR: CHOICE IdentityType (U-RNTI, GroupIdentity) is replaced with the
                -- optional element groupIdentity, since the U-RNTI is mandatory in ASN.1.
                -- In case CHOICE IdentityType is equal to GroupIdentity the value of the U-RNTI
                -- shall be ignored by a UE complying with this version of the message.
                \mbox{groupIdentity} \qquad \qquad \mbox{SEQUENCE (SIZE (1 .. maxURNTI-Group) ) OF}
                                          GroupReleaseInformation
                                                                        OPTIONAL.
                                           CHOICE {
                criticalExtensions
                                                SEQUENCE {
                   r5
                        rrcConnectionRelease-CCCH-r5 RRCConnectionRelease-CCCH-r5-IEs,
                        -- Container for adding non critical extensions after freezing REL-6
                        rrcConnectionRelease-CCCH-r5-add-ext BIT STRING OPTIONAL,
                        v690NonCriticalExtensions SEQUENCE {
                            rrcConnectionRelease-v690ext RRCConnectionRelease-CCCH-v690ext-IEs,
                                                           SEQUENCE {} OPTIONAL
                            nonCriticalExtensions
                           OPTIONAL
                    }.
                    criticalExtensions
                                                  SEQUENCE {}
              }
          }
       }
   }
}
RRCConnectionRelease-CCCH-r3-IEs ::= SEQUENCE {
   -- User equipment IEs
       u-RNTI
                                       U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
       rrcConnectionRelease
                                       RRCConnectionRelease-r3-IEs
RRCConnectionRelease-CCCH-r4-IEs ::= SEQUENCE {
    -- The rest of the message is identical to the one sent on DCCH.
                                       RRCConnectionRelease-r4-IEs
       rrcConnectionRelease
-- The R5 and R4 sequence of IEs are identical in this message
RRCConnectionRelease-CCCH-r5-IEs ::= RRCConnectionRelease-CCCH-r4-IEs
-- The R6 non-critical extension is identical to the one sent on DCCH.
{\tt RRCConnectionRelease-CCCH-v690ext-IEs} \ ::= \ {\tt RRCConnectionRelease-v690ext-IEs}
```

```
__ ***************
-- RRC CONNECTION RELEASE COMPLETE
__ ******************
RRCConnectionReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
                                       RRC-TransactionIdentifier,
        rrc-TransactionIdentifier
        errorIndication FailureCauseWithProtErr laterNonCriticalExtensions SEQUENCE {
                                                                             OPTIONAL,
            -- Container for additional R99 extensions
            rrcConnectionReleaseComplete-r3-add-ext BIT STRING
                                                                         OPTIONAL,
                                           SEQUENCE {} OPTIONAL
            nonCriticalExtensions
           OPTIONAL
}
  *************
-- RRC CONNECTION REQUEST
__ **************************
{\tt RRCConnectionRequest} \ ::= \ {\tt SEQUENCE} \ \big\{
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity
                                         InitialUE-Identity,
        establishmentCause
                                        EstablishmentCause,
        -- protocolErrorIndicator is MD, but for compactness reasons no default value
        -- has been assigned to it.
        protocolErrorIndicator
                                        ProtocolErrorIndicator,
    -- Measurement IEs
                                       MeasuredResultsOnRACH
        measuredResultsOnRACH
                                                                             OPTIONAL,
    -- Non critical Extensions
            rRCConnectionRequest-v3d0ext RRCConnect
Reserved for future.
        v3d0NonCriticalExtensions
                                             RRCConnectionRequest-v3d0ext-IEs,
        -- Reserved for future non critical extension
                NonCriticalExtensions SEQUENCE {
rrcConnectionRequest-v4b0ext
v590NonCriticalExtensions SEQUENCE {
    RRCConnectionRequest-v4b0ext-IEs,
    SEQUENCE {
            v4b0NonCriticalExtensions
                    rrcConnectionRequest-v590ext RRCConnectionRequest-v590ext-IEs,
v690NonCriticalExtensions SEQUENCE {
    rrcConnectionRequest-v690ext RRCConnectionRequest-v690ext-IEs,
                         -- Reserved for future non critical extension
                         v6b0NonCriticalExtensions SEQUENCE {
                             rrcConnectionRequest-v6b0ext
v6e0NonCriticalExtensions
RRCConnectionRequest-v6b0ext-IEs,
SEQUENCE {
                                 rrcConnectionRequest-v6e0ext RRCConnectionRequest-v6e0ext-IEs, v770NonCriticalExtensions SEQUENCE {
                                     rrcConnectionRequest-v770ext
                                                                 RRCConnectionRequest-v770ext-IEs,
                                     v7b0NonCriticalExtensions
                                                                     SEQUENCE {
                                         rrcConnectionRequest-v7b0ext
                                                                 RRCConnectionRequest-v7b0ext-IEs,
                                         v860NonCriticalExtensions
                                                                      SEQUENCE {
                                             {\tt rrcConnectionRequest-v860ext}
                                                                 RRCConnectionRequest-v860ext-IEs,
                                             v7e0NonCriticalExtensions
                                                                             SEQUENCE {
                                                 rrcConnectionRequest-v7e0ext
                                                                  RRCConnectionRequest-v7e0ext-IEs,
                                                 v7g0NonCriticalExtensions SEQUENCE {
                                                     rrcConnectionRequest-v7g0ext
                                                                  RRCConnectionRequest-v7g0ext-IEs,
                                                     OPTIONAL
                                                 OPTIONAL
                                             OPTIONAL
                                         OPTIONAL
                                     OPTIONAL
                                OPTIONAL
                            OPTIONAL
                        ÓPTIONAL
                    OPTIONAL
                OPTIONAL
            OPTIONAL
RRCConnectionRequest-v3d0ext-IEs ::= SEQUENCE {
```

```
-- User equipment IEs
      uESpecificBehaviourInformation1idle UESpecificBehaviourInformation1idle OPTIONAL
}
RRCConnectionRequest-v4b0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
      accessStratumReleaseIndicator AccessStratumReleaseIndicator
}
RRCConnectionRequest-v590ext-IEs ::= SEQUENCE {
  -- User equipment IEs
     predefinedConfigStatusInfo BOOLEAN
}
RRCConnectionRequest-v690ext-IEs ::= SEQUENCE {
   -- User equipment IEs
      ueCapabilityIndication
                                     ENUMERATED { hsdch, hsdch-edch } OPTIONAL,
   -- Measurement IEs
      SEQUENCE {
         cs-domain
            csCallType
                                            ENUMERATED {speech, video, other, spare }
          ps-domain
}
{\tt RRCConnectionRequest-v6b0ext-IEs} \ ::= \ \ {\tt SEQUENCE} \ \big\{
   -- MBMS IEs
                                     MBMS-SelectedServicesShort OPTIONAL
     mbmsSelectedServices
}
{\tt RRCConnectionRequest-v6e0ext-IEs} \ ::= \ \ {\tt SEQUENCE} \ \big\{
   ConnectionRegues:
-- User equipment IEs
                                      ENUMERATED { true } OPTIONAL
}
{\tt RRCConnectionRequest-v770ext-IEs} \ ::= \ \ {\tt SEQUENCE} \ \big\{
   -- User equipment IEs
      }
RRCConnectionRequest-v7b0ext-IEs ::= SEQUENCE {
   -- User equipment IEs
                                     ENUMERATED { true }
      supportForE-FDPCH
                                                                    OPTIONAL
}
RRCConnectionRequest-v7e0ext-IEs ::= SEQUENCE {
      reservedForFutureUse ENUMERATED { true }
                                                              OPTIONAL
}
RRCConnectionRequest-v7g0ext-IEs ::= SEQUENCE {
   -- Measurement IEs
      measuredResultsOnRACH-v7g0ext
                                     MeasuredResultsOnRACH-v7g0ext OPTIONAL
}
RRCConnectionRequest-v860ext-IEs ::= SEQUENCE {
   -- 'dummy' is reserved to ensure compatibility with future v860 extension. It shall
   -- not be set by a UE not having support for the v860 feature.
                                                   OPTIONAL,
OPTIONAL,
OPTIONAL,
OPTIONAL,
OPTIONAL
                          ENUMERATED { true }
ENUMERATED { true }
       dummy2
       dummy3
                               Pre-RedirectionInfo
                               ENUMERATED { true }
ENUMERATED { true }
       dummy4
      dummy5
}
__ **************************
-- RRC CONNECTION SETUP
__ **************
RRCConnectionSetup ::= CHOICE {
                               SEQUENCE {
      rrcConnectionSetup-r3
                                RRCConnectionSetup-r3-IEs,
```

```
-- Container for additional R99 extensions
             rrcConnectionSetup-r3-add-ext BIT STRING
                                                                 OPTIONAL,
             rrcConnectionSetup-v590ext RRCConnectionSetup-v590ext-IEs, v690NonCriticalExtensions SEQUENCE {
                          rrcConnectionSetup-v690ext RRCConnectionSetup-v690ext-IEs,
                          nonCriticalExtensions
                                                              SEQUENCE {}
                                                                             OPTIONAL
                          OPTIONAL
                      OPTIONAL
                 OPTIONAL
             OPTIONAL
        SEQUENCE {
initialUE-Identity
rrc-Transf
    later-than-r3
                                       InitialUE-Identity,
        rrc-TransactionIdentifier
                                            RRC-TransactionIdentifier,
        criticalExtensions
                                           CHOICE {
                 SEQUENCE {
rrcConnectionSetup-r4
v4d0NonCritical
                 Table 1 RRCConnectionSetup-r4-IEs, v4d0NonCriticalExtensions SECTIFNOR (
             r4
                      -- Container for adding non critical extensions after freezing REL-5
                      rrcConnectionSetup-r4-add-ext BIT STRING OPTIONAL,
v590NonCriticalExtensions SEQUENCE {
    rrcConnectionSetup-v590ext
    v690NonCriticalExtensions SEQUENCE {
                               rrcConnectionSetup-v690ext RRCConnectionSetup-v690ext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
                              OPTIONAL
                          OPTIONAL
                 }
                     OPTIONAL
             },
             criticalExtensions
                                                     CHOICE {
                                                     SEQUENCE {
                 r5
                      rrcConnectionSetup-r5
                                                     RRCConnectionSetup-r5-IEs,
                      -- Container for adding non critical extensions after freezing REL-6
                      rrcConnectionSetup-r5-add-ext BIT STRING OPTIONAL,
v690NonCriticalExtensions SEQUENCE {
   rrcConnectionSetup-v690ext nonCriticalExtensions SEQUENCE {} OPTIONAL
                      }
                          OPTIONAL
                 },
                                                   CHOICE {
                 criticalExtensions
                          SEQUENCE {
rrcConnectionSetup-r6 RRCConnectionSetup-r6-IEs,
                           -- Container for adding non critical extensions after freezing REL-7
                          rrcConnectionSetup-r6-add-ext BIT STRING v6b0NonCriticalExtensions SEQUENCE {
                                                                                            OPTTONAL.
                               rrcConnectionSetup-v6b0ext RRCConnectionSetup-v6b0ext-IEs,
                               nonCriticalExtensions
                                                                  SEQUENCE {}
                              OPTIONAL
                                              CHOICE {
                      criticalExtensions
                               SEQUENCE {
rrcConnectionSetup-r7 RRCConnectionSetup-r7-IEs,
                               -- Container for adding non critical extensions after freezing REL-8
                               rrcConnectionSetup-r7-add-ext BIT STRING v780NonCriticalExtensions SEQUENCE {
                                                                                                 OPTIONAL,
                                   rrcConnectionSetup-v780ext RRCConnectionSetup-v780ext-IEs, v7d0NonCriticalExtensions SEQUENCE {
                                        rrcConnectionSetup-v7d0ext RRCConnectionSetup-v7d0ext-IEs,
                                                                           SEQUENCE {} OPTIONAL
                                        nonCriticalExtensions
                                        OPTIONAL
                                   OPTIONAL
                          criticalExtensions
                                                             SEQUENCE {}
                     }
      }
    }
RRCConnectionSetup-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity
                                            InitialUE-Identity,
```

```
rrc-TransactionIdentifier
                                      RRC-TransactionIdentifier,
        activationTime
                                        ActivationTime
                                                                             OPTIONAL,
       new-U-RNTI
                                        U-RNTI,
        new-c-RNTI
                                        C-RNTT
                                                                             OPTIONAL.
        rrc-StateIndicator
                                        RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient,
        -- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
        capabilityUpdateRequirement CapabilityUpdateRequirement
                                                                             OPTIONAL,
    -- Radio bearer IEs
       srb-InformationSetupList
                                      SRB-InformationSetupList2,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                      UL-CommonTransChInfo
        -- NOTE: ul-AddReconfTransChInfoList should be optional in later versions of
        -- this message
       ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
        dl-CommonTransChInfo
                                       DL-CommonTransChInfo
                                                                             OPTIONAL.
        -- NOTE: dl-AddReconfTransChInfoList should be optional in later versions
        -- of this message
        dl-AddReconfTransChInfoList
                                        DL-AddReconfTransChInfoList,
    -- Physical channel IEs
        frequencyInfo
                                       FrequencyInfo
                                                                             OPTIONAL,
       maxAllowedUL-TX-Power
ul-ChannelRequirement
UL-ChannelRequirement
                                                                            OPTIONAL,
                                                                            OPTIONAL.
                                                                            OPTIONAL,
        dl-CommonInformation
                                        DL-CommonInformation
        dl-InformationPerRL-List
                                       DL-InformationPerRL-List
                                                                             OPTIONAL
}
RRCConnectionSetup-v4b0ext-IEs ::= SEQUENCE {
        capabilityUpdateRequirement-r4-ext CapabilityUpdateRequirement-r4-ext OPTIONAL,
    -- Physical channel IEs
       -- dummy is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored.
        dummv
                                            SSDT-UL
                                                                                 OPTIONAL.
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
        cell-id-PerRL-List
                                            CellIdentity-PerRL-List
                                                                                 OPTIONAL
}
RRCConnectionSetup-v590ext-IEs ::= SEQUENCE {
    -- User equipment IEs
       systemSpecificCapUpdateReq
                                       SystemSpecificCapUpdateReq-v590ext
                                                                                 OPTIONAL.
    -- Physical channel IEs
       dl-TPC-PowerOffsetPerRL-List DL-TPC-PowerOffsetPerRL-List OPTIONAL
}
RRCConnectionSetup-r4-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
        activationTime
                                        ActivationTime
                                                                             OPTIONAL,
       new-U-RNTI
                                        U-RNTI,
       new-c-RNTI
                                        C-RNTI
                                                                             OPTIONAL,
        rrc-StateIndicator
                                       RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient,
        -- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
        capabilityUpdateRequirement CapabilityUpdateRequirement-r4
                                                                             OPTIONAL.
    -- Radio bearer IEs
        srb-InformationSetupList
                                      SRB-InformationSetupList2,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                      UL-CommonTransChInfo-r4
                                                                            OPTIONAL.
        ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList
                                                                            OPTIONAL,
        dl-CommonTransChInfo
                                        DL-CommonTransChInfo-r4
                                                                             OPTIONAL,
        dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4
    -- Physical channel IEs
        frequencyInfo
                                                                             OPTIONAL.
                                        FrequencyInfo
       maxAllowedUL-TX-Power MaxAllowedUL-TX-Power ul-ChannelRequirement UL-ChannelRequirement-r4 dl-CommonInformation DL-CommonInformation-r4 dl-InformationPerRL-List DL-InformationPerRL-List-r4
                                                                             OPTIONAL,
                                                                             OPTIONAL,
                                                                             OPTIONAL,
                                                                            OPTIONAL
}
RRCConnectionSetup-r5-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
        activationTime
                                       ActivationTime
                                                                             OPTIONAL,
        new-U-RNTI
                                        U-RNTI,
       new-c-RNTI
                                        C-RNTI
                                                                             OPTIONAL,
        rrc-StateIndicator
                                        RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff
                                        UTRAN-DRX-CycleLengthCoefficient,
```

```
-- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
       capabilityUpdateRequirement
                                       CapabilityUpdateRequirement-r5
                                                                          OPTIONAL,
    -- Specification mode information
       specificationMode
                                       CHOICE {
                                          SEQUENCE {
           complete
                -- Radio bearer IEs
               srb-InformationSetupList
                                               SRB-InformationSetupList2,
                -- Transport channel IEs
               ul-CommonTransChInfo
                                               UL-CommonTransChInfo-r4
               ul-AddReconfTransChInfoList
                                               UL-AddReconfTransChInfoList
                                                                                   OPTIONAL,
               dl-CommonTransChInfo
                                               DL-CommonTransChInfo-r4
                                                                                   OPTIONAL,
               dl-AddReconfTransChInfoList
                                               DL-AddReconfTransChInfoList-r4
                                                                                   OPTIONAL.
           preconfiguration
                                           SEQUENCE {
               -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
                \mbox{--} one for the FDD only elements and one for the TDD only elements, so that one
               -- FDD/TDD choice in this level is sufficient.
               preConfigMode
                                               CHOICE {
                                                PredefinedConfigIdentity,
                   predefinedConfigIdentity
                    defaultConfig
                                                   SEQUENCE {
                        defaultConfigMode
                                                      DefaultConfigMode,
                       defaultConfigIdentity
                                                       DefaultConfigIdentity-r5
               }
           }
    -- Physical channel IEs
                                                                           OPTIONAL.
       frequencyInfo
                                       FrequencyInfo
       maxAllowedUL-TX-Power
                                       MaxAllowedUL-TX-Power
                                                                           OPTIONAL.
       ul-ChannelRequirement
                                       UL-ChannelRequirement-r4
                                                                           OPTIONAL.
       dl-CommonInformation
                                      DL-CommonInformation-r4
       dl-InformationPerRL-List
                                       DL-InformationPerRL-List-r5bis
                                                                           OPTIONAL
}
RRCConnectionSetup-v690ext-IEs ::= SEQUENCE {
   -- Physical Channel IEs
       beaconPLEst.
                                       BEACON-PL-Est
                                                                           OPTIONAL.
       postVerificationPeriod
                                       ENUMERATED { true }
                                                                           OPTIONAL
}
RRCConnectionSetup-r6-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
       activationTime
                                       ActivationTime
                                                                            OPTIONAL,
       new-U-RNTI
                                       U-RNTI,
       new-c-RNTI
                                       C-RNTI
                                                                           OPTIONAL,
                                       H-RNTT
                                                                           OPTIONAL,
       new-H-RNTT
       newPrimary-E-RNTI
                                       E-RNTT
                                                                            OPTIONAL.
                                       E-RNTI
       newSecondary-E-RNTI
                                                                            OPTIONAL,
       rrc-StateIndicator
                                       RRC-StateIndicator,
       utran-DRX-CycleLengthCoeff
                                       UTRAN-DRX-CycleLengthCoefficient,
        -- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
                                       CapabilityUpdateRequirement-r5
       capabilityUpdateRequirement
    -- Specification mode information
       specificationMode
                                      CHOICE {
           complete
                                           SEQUENCE {
                -- Radio bearer IEs
               srb-InformationSetupList
                                               SRB-InformationSetupList2-r6,
               -- Transport channel IEs
               ul-CommonTransChInfo
                                               UL-CommonTransChInfo-r4
                                                                                   OPTIONAL,
               ul-AddReconfTransChInfoList
                                               UL-AddReconfTransChInfoList-r6
                                                                                    OPTIONAL,
               dl-CommonTransChInfo
                                               DL-CommonTransChInfo-r4
               dl-AddReconfTransChInfoList
                                               DL-AddReconfTransChInfoList-r5
                                                                                   OPTIONAL
           },
           preconfiguration
                                           SEQUENCE {
               -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
                -- one for the FDD only elements and one for the TDD only elements, so that one
               -- FDD/TDD choice in this level is sufficient.
               preConfigMode
                                               CHOICE {
                   \stackrel{-}{\text{predefinedConfigIdentity}}
                                                 PredefinedConfigIdentity,
                    defaultConfig
                                                   SEQUENCE {
                                                   DefaultConfigMode,
                       defaultConfiqMode
                       defaultConfigIdentity
                                                      DefaultConfigIdentity-r6
               }
           }
       },
```

```
-- Physical channel IEs
            frequencyInfo FrequencyInfo OPTIONAL,
maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
ul-DPCH-Info UL-DPCH-Info-r6 OPTIONAL,
ul-EDCH-Information UL-EDCH-Information-r6 OPTIONAL,
dl-HSPDSCH-Information DL-HSPDSCH-Information-r6 OPTIONAL,
dl-CommonInformation DL-CommonInformation-r6 OPTIONAL,
dl-InformationPerRL-List DL-InformationPerRL-List-r6 OPTIONAL
}
RRCConnectionSetup-v6b0ext-IEs ::= SEQUENCE {
      -- Physical channel IEs
             dl-InformationPerRL-List-v6b0ext DL-InformationPerRL-List-v6b0ext OPTIONAL
}
RRCConnectionSetup-r7-IEs ::= SEQUENCE {
       -- TABULAR: Integrity protection shall not be performed on this message.
                                           ActivationTime
             activationTime
                                                                                                                                 OPTIONAL.
             new-U-RNTI
                                                                  U-RNTI,
             new-c-RNTI
                                                                   C-RNTI
                                                                                                                                 OPTIONAL,
             new-H-RNTI
                                                                  H-RNTI
             new-H-RNTI H-RNTI
newPrimary-E-RNTI E-RNTI
newSecondary-E-RNTI E-RNTI
rrc-StateIndicator RRC-StateIndicator,
utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient-r7,
                                                                                                                                 OPTIONAL.
                                                                                                                                 OPTIONAL,
                                                                                                                                 OPTIONAL,
             -- TABULAR: If capabilityUpdateRequirement is not present, the default value
              -- defined in 10.3.3.2 shall be used.
             capabilityUpdateRequirement -r7 OPTIONAL,
             supportForChangeOfUE-Capability BOOLEAN,
       -- Specification mode information
                                                     CHOICE {
             specificationMode
                                                                   SEQUENCE {
                    complete
                           -- Radio bearer IEs
                          -- Radio Bearer IBS
srb-InformationSetupList SRB-InformationSetupList2-r7,
-- Transport channel IES
ul-CommonTransChInfo UL-CommonTransChInfo-r4 OPTIONAL,
ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList-r7 OPTIONAL,
dl-CommonTransChInfo DL-CommonTransChInfo-r4 OPTIONAL,
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r7 OPTIONAL
                                                                                                                                              OPTIONAL,
                    preconfiguration
                                                                         SEQUENCE {
                          -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
                           -- one for the FDD only elements and one for the TDD only elements, so that one
                           -- \mbox{FDD/TDD} choice in this level is sufficient.
                                                                       CHOICE {
                           preConfigMode
                                 predefinedConfigIdentity PredefinedConfigIdentity,
defaultConfig SEQUENCE {
    defaultConfigMode DefaultConfigMode,
    defaultConfigIdentity DefaultConfigIdentity-r6
                                  }
                           }
                    }
       -- Physical channel IEs
            Physical channel IES
frequencyInfo FrequencyInfo OPTIONAL,
multi-frequencyInfo Multi-frequencyInfo-LCR-r7 OPTIONAL,
dtx-drx-TimingInfo DTX-DRX-TimingInfo-r7 OPTIONAL,
dtx-drx-Info DTX-DRX-Info-r7 OPTIONAL,
hs-scch-LessInfo HS-SCCH-LessInfo-r7 OPTIONAL,
maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
ul-DPCH-Info UL-DPCH-Info-r7 OPTIONAL,
ul-EDCH-Information UL-EDCH-Information-r7 OPTIONAL,
dl-HSPDSCH-Information DL-HSPDSCH-Information-r7 OPTIONAL,
dl-CommonInformation DL-CommonInformation-r7 OPTIONAL,
dl-InformationPerRL-List DL-InformationPerRL-List-r7 OPTIONAL
}
RRCConnectionSetup-v780ext-IEs ::= SEQUENCE {
      -- Physical channel IEs
-- Physical channel IEs
-- Physical TBSizeTable
-- HS-DSCH-TBSizeTable
                                                                                                                              OPTIONAL
}
RRCConnectionSetup-v7d0ext-IEs ::= SEQUENCE {
      -- Physical channel IEs
                                                                  UL-EDCH-Information-ext
             ul-EDCH-Information
                                                                                                                              OPTIONAL
}
```

```
-- RRC CONNECTION SETUP COMPLETE
__ ************************
RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
   -- User equipment IEs
       rrc-TransactionIdentifier
                                     RRC-TransactionIdentifier,
       startList
                                       STARTList,
       ue-RadioAccessCapability
                                      UE-RadioAccessCapability
                                                                        OPTIONAL,
    -- Other IEs
       ue-RATSpecificCapability
                                     InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- Non critical extensions
       v370NonCriticalExtensions
                                          SEQUENCE {
           {\tt rrcConnectionSetupComplete-v370ext} \quad {\tt RRCConnectionSetupComplete-v370ext}, \\
                                              SEQUENCE {
           v380NonCriticalExtensions
               rrcConnectionSetupComplete-v380ext RRCConnectionSetupComplete-v380ext-IEs,
                -- Reserved for future non critical extension
                                                 SEQUENCE {
               v3a0NonCriticalExtensions
                   \verb|rrcConnectionSetupComplete-v3a0ext-IEs|, \\
                   laterNonCriticalExtensions
                                                      SEQUENCE {
                        -- Container for additional R99 extensions
                       rrcConnectionSetupComplete-r3-add-ext
                                                                  BIT STRING
                               (CONTAINING RRCConnectionSetupComplete-r3-add-ext-IEs) OPTIONAL,
                       v3q0NonCriticalExtensions
                                                      SEQUENCE {
                           \verb|rrcConnectionSetupComplete-v3g0ext-RRCConnectionSetupComplete-v3g0ext-IEs|, \\
                           v4b0NonCriticalExtensions
                                                              SEQUENCE {
                               rrcConnectionSetupComplete-v4b0ext
                                                              RRCConnectionSetupComplete-v4b0ext-IEs,
                               v590NonCriticalExtensions
                                                                 SEQUENCE {
                                   rrcConnectionSetupComplete-v590ext
                                                              RRCConnectionSetupComplete-v590ext-IEs,
                                                                      SEQUENCE {
                                   v5c0NonCriticalExtensions
                                       rrcConnectionSetupComplete-v5c0ext
                                                             RRCConnectionSetupComplete-v5c0ext-IEs,
                                       v690NonCriticalExtensions
                                                                         SEQUENCE {
                                           rrcConnectionSetupComplete-v690ext
                                                              RRCConnectionSetupComplete-v690ext-IEs,
                                           v770NonCriticalExtensions
                                                                          SEQUENCE {
                                              rrcConectionSetupComplete-v770ext
                                                             RRCConnectionSetupComplete-v770ext-IEs,
                                              nonCriticalExtensions
                                                                         SEQUENCE {}
                                                                                        OPTIONAL
                                                  OPTIONAL
                                              OPTIONAL
                                           OPTIONAL
                                       OPTIONAL
                                   OPTIONAL
                               OPTIONAL
                           OPTIONAL
                       OPTIONAL
           }
                   OPTIONAL.
               OPTIONAL
RRCConnectionSetupComplete-v370ext ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability-v370ext UE-RadioAccessCapability-v370ext OPTIONAL
}
RRCConnectionSetupComplete-v380ext-IEs ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability-v380ext
                                          UE-RadioAccessCapability-v380ext
                                                                                  OPTIONAL,
       dl-PhysChCapabilityFDD-v380ext
                                          DL-PhysChCapabilityFDD-v380ext
}
RRCConnectionSetupComplete-v3a0ext-IEs ::= SEQUENCE {
   -- User equipment IEs
       ue-RadioAccessCapability-v3a0ext
                                          UE-RadioAccessCapability-v3a0ext OPTIONAL
}
RRCConnectionSetupComplete-v3q0ext-IEs ::= SEQUENCE {
   -- User equipment IEs
       ue-RadioAccessCapability-v3g0ext UE-RadioAccessCapability-v3g0ext OPTIONAL
}
RRCConnectionSetupComplete-r3-add-ext-IEs ::= SEQUENCE {
                                              RRCConnectionSetupComplete-v650ext-IEs OPTIONAL,
       rrcConnectionSetupComplete-v650ext
```

```
SEQUENCE {
        v680NonCriticalExtensions
           rrcConnectionSetupComplete-v680ext RRCConnectionSetupComplete-v680ext-IEs, v7e0NonCriticalExtensions SEQUENCE {
                rrcConnectionSetupComplete-v7e0ext
v7f0NonCriticalExtensions
RRCConnectionSetupComplete-v7e0ext-IEs,
vFf0NonCriticalExtensions
RRCConnectionSetupComplete-v7e0ext-IEs,
vFf0NonCriticalExtensions
                   rrcConnectionSetupComplete-v7f0ext RRCConnectionSetupComplete-v7f0ext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
                OPTIONAL
                       OPTIONAL
           }
               OPTIONAL
}
RRCConnectionSetupComplete-v4b0ext-IEs ::= SEQUENCE {
   -- User equipment IEs
       ue-RadioAccessCapability-v4b0ext
                                               UE-RadioAccessCapability-v4b0ext
                                                                                       OPTIONAL
}
RRCConnectionSetupComplete-v590ext-IEs ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability-v590ext
                                               UE-RadioAccessCapability-v590ext
                                                                                       OPTIONAL,
    -- Other IEs
       ue-RATSpecificCapability-v590ext
                                               InterRAT-UE-RadioAccessCapability-v590ext OPTIONAL
}
RRCConnectionSetupComplete-v5c0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability-v5c0ext
                                              UE-RadioAccessCapability-v5c0ext
                                                                                       OPTIONAL
}
{\tt RRCConnectionSetupComplete-v650ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
    -- User equipment IEs
      ue-RadioAccessCapability-v650ext
                                               UE-RadioAccessCapability-v650ext
}
{\tt RRCConnectionSetupComplete-v680ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
   -- User equipment IEs
      ue-RadioAccessCapability-v680ext
                                               UE-RadioAccessCapability-v680ext
}
RRCConnectionSetupComplete-v690ext-IEs ::= SEQUENCE {
   -- User equipment IEs
       ueCapabilityContainer
                                            BIT STRING
                                                (CONTAINING UE-CapabilityContainer-IEs) OPTIONAL
RRCConnectionSetupComplete-v770ext-IEs ::= SEQUENCE {
       deferredMeasurementControlReading ENUMERATED { true }
                                                                                    OPTIONAL
}
RRCConnectionSetupComplete-v7e0ext-IEs ::= SEQUENCE {
   -- User equipment IEs
       ue-RadioAccessCapability
                                                UE-RadioAccessCapability-v7e0ext
}
RRCConnectionSetupComplete-v7f0ext-IEs ::= SEQUENCE {
   -- User equipment IEs
       ue-RadioAccessCapability
                                                UE-RadioAccessCapability-v7f0ext OPTIONAL
}
__ ************************
-- RRC FAILURE INFO
__ ***************
RRC-FailureInfo ::= CHOICE {
                                                SEQUENCE {
   r3
        rRC-FailureInfo-r3
        RRC-FailureInfo-r3-IEs,
            -- Container for additional R99 extensions
            rrc-FailureInfo-r3-add-ext BIT STRING
                                                           OPTIONAL,
           nonCriticalExtensions
                                                       SEQUENCE {} OPTIONAL
        } OPTIONAL
                                                 SEQUENCE {}
    criticalExtensions
                               SEQUENCE {
RRC-FailureInfo-r3-IEs ::=
```

```
-- Non-RRC IEs
       failureCauseWithProtErr
                                                        FailureCauseWithProtErr
}
__ ***************
-- RRC STATUS
__ ***************************
RRCStatus ::= SEQUENCE {
    -- Other IEs
        -- TABULAR: Identification of received message is nested in
        -- ProtocolErrorMoreInformation
       -- Container for additional R99 extensions
           rrcStatus-r3-add-ext BIT STRING OPTIONAL, nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
}
__ ****************
-- SECURITY MODE COMMAND
__ ****************
SecurityModeCommand ::= CHOICE {
        securityModeCommand-r3 SEQUENCE {
        -- Container for additional R99 extensions
            securityModeCommand-r3-add-ext BIT STRING OPTIONAL,
           nonCriticalExtensions SEQUENCE {} OPTIONAL
           OPTIONAL
       er-than-r3

rrc-TransactionIdentifier

criticalExtensions

r7

SEQUENCE {

RRC-TransactionIdentifier,

CHOICE {

CHOICE {
    later-than-r3
                securityModeCommand-r7 SecurityModeCommand-r7
                                            SecurityModeCommand-r7-IEs,
                -- Container for adding non critical extensions after freezing REL-8
               securityModeCommand-r7-add-ext BIT STRING OPTIONAL, nonCriticalExtensions SEQUENCE {} OPTIONAL
                                          SEQUENCE {}
            criticalExtensions
        }
    }
}
SecurityModeCommand-r3-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
-- User equipment IEs
       rrc-TransactionIdentifier RRC-TransactionIdentifier,
securityCapability SecurityCapability,
cipheringModeInfo CipheringModeInfo
integrityProtectionModeInfo IntegrityProtectionModeInfo
                                                                           OPTIONAL,
                                                                          OPTIONAL,
    -- Core network IEs
       cn-DomainIdentity
                                       CN-DomainIdentity,
    -- Other IEs
        ue-SystemSpecificSecurityCap InterRAT-UE-SecurityCapList
                                                                          OPTIONAL
}
SecurityModeCommand-r7-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
-- User equipment IEs
       securityCapability
                                       SecurityCapability,
       cipheringModeInfo CipheringModeInfo-r7 OPTIONAL, integrityProtectionModeInfo IntegrityProtectionModeInfo-r7 OPTIONAL,
    -- Core network IEs
       cn-DomainIdentity
                                       CN-DomainIdentity,
    -- Other IEs
       ue-SystemSpecificSecurityCap InterRAT-UE-SecurityCapList OPTIONAL
}
__ ****************
```

```
-- SECURITY MODE COMPLETE
__ ***************
SecurityModeComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
   -- User equipment IEs
      rrc-TransactionIdentifier RRC-TransactionIdentifier, ul-IntegProtActivationInfo IntegrityProtActivationInf
                                  IntegrityProtActivationInfo
                                                                  OPTIONAL,
   -- Radio bearer IEs
      rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfoList laterNonCriticalExtensions SEQUENCE {
                                                                  OPTIONAL.
          -- Container for additional R99 extensions
          securityModeComplete-r3-add-ext BIT STRING OPTIONAL,
          } OPTIONAL
__ **************
-- SECURITY MODE FAILURE
__ ****************
SecurityModeFailure ::= SEQUENCE {
   -- User equipment IEs
      rrc-TransactionIdentifier RRC-TransactionIdentifier, failureCause FailureCauseWithProtErr, laterNonCriticalExtensions SEQUENCE {
           -- Container for additional R99 extensions
          securityModeFailure-r3-add-ext BIT STRING OPTIONAL, nonCriticalExtensions SEQUENCE {} OPTIONAL
       } OPTIONAL
}
__ ****************
-- SIGNALLING CONNECTION RELEASE
__ ****************
SignallingConnectionRelease ::= CHOICE {
                               SEQUENCE {
       signallingConnectionRelease-r3 SignallingConnectionRelease-r3-IEs,
laterNonCriticalExtensions SEQUENCE {
          -- Container for additional R99 extensions
          signallingConnectionRelease-r3-add-ext BIT STRING
                                                              OPTIONAL,
                                SEQUENCE {} OPTIONAL
          nonCriticalExtensions
      } OPTIONAL
   later-than-r3
                              SEQUENCE {
      rrc-TransactionIdentifier RRC-TransactionIdentifier,
                                   SEQUENCE { }
      criticalExtensions
   }
}
SignallingConnectionRelease-r3-IEs ::= SEQUENCE {
   -- User equipment IEs
      rrc-TransactionIdentifier RRC-TransactionIdentifier,
   -- Core network IEs
      cn-DomainIdentity
                                   CN-DomainIdentity
}
__ ****************
-- SIGNALLING CONNECTION RELEASE INDICATION
__ *************************
SignallingConnectionReleaseIndication ::= SEQUENCE {
   -- Core network IEs
       cn-DomainIdentity
          -- Container for additional R99 extensions
          signallingConnectionReleaseIndication-r3-add-ext BIT STRING
          } OPTIONAL
```

```
}
__ ******************
-- SYSTEM INFORMATION for BCH
__ ***************
{\tt SystemInformation-BCH} \ ::= \ {\tt SEQUENCE} \ \big\{
     - Other information elements
       sfn-Prime
                                     SFN-Prime,
                                     CHOICE {
       payload
           noSegment
                                         NULL,
           firstSegment
                                         FirstSegment,
           subsequentSegment
                                         SubsequentSegment,
           lastSegmentShort
                                               LastSegmentShort,
                                         SEQUENCE {
           lastAndFirst
               lastSegmentShort
                                            LastSegmentShort,
               firstSegment
                                             FirstSegmentShort
           lastAndComplete
                                       SEQUENCE {
                                         LastSegmentShort,
               lastSegmentShort
               completeSIB-List
                                             CompleteSIB-List
           lastAndCompleteAndFirst SEQUENCE {
    lastSegmentShort LastSeg
                                         LastSegmentShort,
               completeSIB-List
                                            CompleteSIB-List,
                                             FirstSegmentShort
               firstSegment
                                       CompleteSIB-List,
           completeSIB-List
           completeAndFirst
                                         SEQUENCE {
               completeSIB-List
                                            CompleteSIB-List,
               firstSegment
                                             FirstSegmentShort
           completeSIB
                                         CompleteSIB,
           lastSegment
                                         LastSegment,
           spare5
                                         NULL,
           spare4
                                         NULL,
           spare3
                                         NULL,
           spare2
                                         NULL,
           spare1
                                         NULL
}
__ *****************
-- SYSTEM INFORMATION for FACH
__ ***************
SystemInformation-FACH ::= SEQUENCE {
   -- Other information elements
       payload
                                     CHOICE {
           noSegment
           firstSegment
                                         FirstSegment,
                                    SubsequentSegment,
LastSegmentShort,
SEQUENCE {
           subsequentSegment
           lastSegmentShort
           lastAndFirst
               lastSegmentShort
                                             LastSegmentShort,
               firstSegment
                                            FirstSegmentShort
           lastAndComplete
                                         SEQUENCE {
              lastSegmentShort
                                         LastSegmentShort,
               completeSIB-List
                                             CompleteSIB-List
           },
lastAndCompleteAndFirst
lastSegmentShort
                                         SEQUENCE {
                                             LastSegmentShort,
               completeSIB-List
                                             CompleteSIB-List,
               firstSegment
                                             FirstSegmentShort
           completeSIB-List
                                         CompleteSIB-List,
           completeAndFirst
                                         SEQUENCE {
                                            CompleteSIB-List,
              completeSIB-List
               firstSegment
                                             FirstSegmentShort
           completeSIB
                                        CompleteSIB,
                                         LastSegment,
           lastSegment
           spare5
                                         NULL,
```

```
spare4
                                  NULL,
                                  NULL,
         spare3
         spare2
                                  NULL,
                                  NULL
         spare1
}
__ ***************
-- First segment
__ ***************
  stSegment ::=
-- Other information elements
-- ih-Type SIB-Type,
SegCount,
FirstSegment ::=
     sib-Data-fixed
                               SIB-Data-fixed
}
__ *************************
-- First segment (short)
__ ***************
FirstSegmentShort ::=
                           SEQUENCE {
  -- Other information elements
     sib-Type
                              SIB-Type,
                             SegCount,
      seg-Count
      sib-Data-variable
                               SIB-Data-variable
}
__ ***************
-- Subsequent segment
__ ***************
SubsequentSegment ::=
                           SEQUENCE {
   -- Other information elements
     sib-Type
                               SIB-Type,
      segmentIndex
                              SegmentIndex,
      sib-Data-fixed
                               SIB-Data-fixed
}
__ ***************
-- Last segment
__ ***************
                           SEQUENCE {
LastSegment ::=
   -- Other information elements sib-Type SIB-Type,
      segmentIndex
                               SegmentIndex,
      -- For sib-Data-fixed, in case the SIB data is less than 222 bits, padding
      -- shall be used. The same padding bits shall be used as defined in clause 12.1
      sib-Data-fixed
                              SIB-Data-fixed
}
  -- Other information elements
sib-Type SIB-Type,
SegmentIndex,
LastSegmentShort ::=
                                  SEQUENCE {
      sib-Data-variable
                               SIB-Data-variable
}
__ ***************
__ ***************
CompleteSIB-List ::=
                           SEQUENCE (SIZE (1..maxSIBperMsg)) OF
                               CompleteSIBshort
                            SEQUENCE {
CompleteSIB ::=
```

```
-- Other information elements
       sib-Type
                                     SIB-Type,
       -- For sib-Data-fixed, in case the SIB data is less than 226 bits, padding
       -- shall be used. The same padding bits shall be used as defined in clause 12.1
       sib-Data-fixed
                                    BIT STRING (SIZE (226))
}
                                       SEQUENCE {
CompleteSIBshort ::=
    -- Other information elements
       sib-Type
                                     SIB-Type,
       sib-Data-variable
                                     SIB-Data-variable
}
__ *******************
-- SYSTEM INFORMATION CHANGE INDICATION
__ ****************
SystemInformationChangeIndication ::= SEQUENCE {
    -- Other IEs
       bcch-ModificationInfo
                                         BCCH-ModificationInfo,
       laterNonCriticalExtensions
                                         SEQUENCE {
           -- Container for additional R99 extensions
           systemInformationChangeIndication-r3-add-ext
                                                           BIT STRING
                                                                         OPTIONAL,
                                        SEQUENCE {}
           nonCriticalExtensions
                                                       OPTIONAL
         OPTIONAL
__ ****************
-- TRANSPORT CHANNEL RECONFIGURATION
__ ***************
TransportChannelReconfiguration ::= CHOICE {
       transportChannelReconfiguration-r3
                                     TransportChannelReconfiguration-r3-IEs,
       v3a0NonCriticalExtensions
                                    SEQUENCE {
           transportChannelReconfiguration-v3a0ext
                                       TransportChannelReconfiguration-v3a0ext,
           laterNonCriticalExtensions
                                            SEQUENCE {
               -- Container for additional R99 extensions
               transportChannelReconfiguration-r3-add-ext BIT STRING
                                                                         OPTIONAL,
               v4b0NonCriticalExtensions
                                        SEQUENCE {
                  transportChannelReconfiguration-v4b0ext
                                              TransportChannelReconfiguration-v4b0ext-IEs, SEQUENCE {
                  v590NonCriticalExtensions
                      transportChannelReconfiguration-v590ext
                                                    TransportChannelReconfiguration-v590ext-IEs,
                                                    SEQUENCE {
                      v690NonCriticalExtensions
                          transportChannelReconfiguration-v690ext
                                                    TransportChannelReconfiguration-v690ext-IEs,
                          v770NonCriticalExtensions
                                                     SEQUENCE {
                             transportChannelReconfiguration-v770ext
                                                    TransportChannelReconfiguration-v770ext-IEs,
                             nonCriticalExtensions
                                                           SEQUENCE {}
                                                                         OPTIONAL
                                 OPTIONAL
                             OPTIONAL
                          OPTIONAL
                      OPTIONAL
                  OPTIONAL
           }
               OPTIONAL
                                 SEQUENCE {
   later-than-r3
       rrc-TransactionIdentifier
                                     RRC-TransactionIdentifier,
       criticalExtensions
                                     CHOICE {
                                         SEQUENCE {
               transportChannelReconfiguration-r4
                                           TransportChannelReconfiguration-r4-IEs,
                                                SEQUENCE {
               v4d0NonCriticalExtensions
                   -- Container for adding non critical extensions after freezing REL-5
                   transportChannelReconfiguration-r4-add-ext BIT STRING OPTIONAL,
                  v590NonCriticalExtensions
                                              SEQUENCE {
                      transportChannelReconfiguration-v590ext
                                                TransportChannelReconfiguration-v590ext-IEs,
                      v690NonCriticalExtensions
                                                    SEQUENCE {
```

transportChannelReconfiguration-v690ext

```
TransportChannelReconfiguration-v690ext-IEs,
                            v770NonCriticalExtensions
                                                          SEQUENCE {
                               transportChannelReconfiguration-v770ext
                                                       TransportChannelReconfiguration-v770ext-IEs,
                                                               SEQUENCE {}
                               nonCriticalExtensions
                                                                              OPTIONAL
                               OPTIONAL
                           OPTIONAL
                       OPTIONAL
                }
                   OPTIONAL
            },
                                           CHOICE {
            criticalExtensions
                                               SEQUENCE {
                    transportChannelReconfiguration-r5
                                                   TransportChannelReconfiguration-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    transportChannelReconfiguration-r5-add-ext
                                                                   BIT STRING
                                                                                   OPTIONAL.
                    v690NonCriticalExtensions
                                                  SEOUENCE {
                        transportChannelReconfiguration-v690ext
                                                       TransportChannelReconfiguration-v690ext-IEs,
                       v770NonCriticalExtensions
                                                       SEQUENCE {
                               transportChannelReconfiguration-v770ext
                                                       TransportChannelReconfiguration-v770ext-IEs,
                           nonCriticalExtensions
                                                           SEQUENCE {}
                                                                          OPTIONAL
                           OPTIONAL
                    }
                       OPTIONAL
                                                CHOICE {
                criticalExtensions
                                                  SEQUENCE {
                   r6
                        transportChannelReconfiguration-r6
                                                       TransportChannelReconfiguration-r6-IEs,
                        -- Container for adding non critical extensions after freezing REL-7
                        transportChannelReconfiguration-r6-add-ext BIT STRING
                                                                                       OPTIONAL,
                                                       SEQUENCE {
                        v6b0NonCriticalExtensions
                            {\tt transportChannelReconfiguration-v6b0ext}
                                                       TransportChannelReconfiguration-v6b0ext-IEs,
                            v770NonCriticalExtensions
                                                          SEQUENCE {
                               transportChannelReconfiguration-v770ext
                                                       TransportChannelReconfiguration-v770ext-IEs,
                               nonCriticalExtensions
                                                               SEQUENCE {}
                                                                               OPTIONAL
                               OPTIONAL
                           OPTIONAL
                       }
                    criticalExtensions
                                                   CHOICE {
                       r7
                                                       SEQUENCE {
                            transportChannelReconfiguration-r7
                                                       TransportChannelReconfiguration-r7-IEs,
                            -- Container for adding non critical extensions after freezing REL-8
                            transportChannelReconfiguration-r7-add-ext
                                                                          BIT STRING OPTIONAL,
                            v780NonCriticalExtensions SEQUENCE {
                               transportChannelReconfiguration-v780ext
                                                       TransportChannelReconfiguration-v780ext-IEs,
                                v7d0NonCriticalExtensions
                                                              SEQUENCE {
                                    transportChannelReconfiguration-v7d0ext
                                                       TransportChannelReconfiguration-v7d0ext-IEs,
                                    v7f0NonCriticalExtensions
                                                                   SEQUENCE {
                                        transportChannelReconfiguration-v7f0ext
                                                       TransportChannelReconfiguration-v7f0ext-IEs,
                                        v7q0NonCriticalExtensions
                                                                       SEQUENCE {
                                           transportChannelReconfiguration-v7g0ext
                                                       TransportChannelReconfiguration-v7g0ext-IEs,
                                           nonCriticalExtensions
                                                                           SEQUENCE {}
                                                                                         OPTIONAL
                                           OPTIONAL
                                        OPTIONAL
                                   OPTIONAL
                               OPTIONAL
                       criticalExtensions
                                                      SEQUENCE {}
      }
                   }
    }
}
TransportChannelReconfiguration-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
       rrc-TransactionIdentifier
                                     RRC-TransactionIdentifier,
```

```
integrityProtectionModeInfo
                                        IntegrityProtectionModeInfo
                                                                                OPTIONAL,
        cipheringModeInfo
                                          CipheringModeInfo
                                                                                OPTIONAL,
        activationTime
                                         ActivationTime
                                                                                OPTIONAL,
        new-U-RNTI
                                         II-RNTT
                                                                                OPTIONAL,
        new-C-RNTI
                                         C-RNTI
                                                                                OPTIONAL,
        rrc-StateIndicator RRC-StateIndicator, utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient
                                                                               OPTIONAL.
    -- Core network IEs
        cn-InformationInfo
                                         CN-InformationInfo
                                                                                OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity
                                         URA-Identity
                                                                                OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo
                                                                               OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo UL-CommonTransChInfo
ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList
                                                                                OPTIONAL,
                                                                               OPTIONAL,
        -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification, -- they should not be sent and if received they should be ignored.
        dummy
                                         CHOICE {
            fdd
                                              SEQUENCE {
                dummy1
                                                  CPCH-SetID
                                                                                OPTIONAL,
                 dummy2
                                                  DRAC-StaticInformationList OPTIONAL
            },
            t.dd
                                              NULL
                                                                               OPTIONAL.
        dl-CommonTransChInfo DL-CommonTransChInfo dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList
                                                                                OPTIONAL,
                                                                               OPTIONAL,
    -- Physical channel IEs
        frequencyInfo
                                         FrequencyInfo
                                                                               OPTIONAL,
        maxAllowedUL-TX-Power ul-ChannelRequirement
                                         MaxAllowedUL-TX-Power
                                                                                OPTIONAL.
                                         UL-ChannelRequirement
                                                                                OPTIONAL.
        modeSpecificPhysChInfo
                                        CHOICE {
                                              SEQUENCE {
            fdd
                 -- dummy is not used in this version of specification, it should
                 -- not be sent and if received it should be ignored.
                                                  DL-PDSCH-Information
                                                                                OPTIONAL
            },
            tdd
                                         NULL
        dl-CommonInformation
                                         DL-CommonInformation
                                                                                OPTIONAL.
        dl-InformationPerRL-List
                                         DL-InformationPerRL-List
                                                                                OPTIONAL
}
TransportChannelReconfiguration-v3a0ext ::= SEQUENCE {
    -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
    -- the UE behaviour is unspecified
    new-DSCH-RNTI
                                      DSCH-RNTI
                                                                            OPTIONAL
}
TransportChannelReconfiguration-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- dummy is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored.
                                              SSDT-UL
                                                                                    OPTIONAL.
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
        cell-id-PerRL-List
                                              CellIdentity-PerRL-List
                                                                                    OPTIONAL
}
TransportChannelReconfiguration-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List DL-TPC-PowerOffsetPerRL-List
                                                                              OPTIONAL
}
TransportChannelReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo
                                         IntegrityProtectionModeInfo
                                                                                OPTIONAL,
        cipheringModeInfo
                                         CipheringModeInfo
                                                                                OPTIONAL,
        activationTime
                                          ActivationTime
                                                                                OPTIONAL.
        new-U-RNTI
                                                                                OPTIONAL,
                                          U-RNTI
        new-C-RNTI
                                         C-RNTI
        -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
        -- the UE behaviour is unspecified
        new-DSCH-RNTI
                                         DSCH-RNTI
                                                                                OPTIONAL,
        rrc-StateIndicator
                                          RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
                                         CN-InformationInfo
        cn-InformationInfo
                                                                                OPTIONAL,
```

```
-- UTRAN mobility IEs
                                             URA-Identity
        ura-Identity
                                                                                       OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo
                                                                                      OPTIONAL,
    -- Transport channel IEs
         ul-CommonTransChInfo UL-CommonTransChInfo-r4 ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList
                                                                                      OPTIONAL.
         -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification,
         -- they should not be sent and if received they should be ignored.
         dummy
                                             CHOICE {
             fdd
                                                 SEQUENCE {
                  dummv1
                                                      CPCH-SetID
                                                                                       OPTIONAL.
                                                       DRAC-StaticInformationList OPTIONAL
                  dummy2
             tdd
                                                  NULL
                                                                                       OPTIONAL,
        dl-CommonTransChInfo DL-CommonTransChInfo-r4
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4
                                                                                      OPTIONAL.
                                                                                      OPTIONAL.
    -- Physical channel IEs
         frequencyInfo
                                             FrequencyInfo
                                                                                      OPTIONAL,
        maxAllowedUL-TX-Power MaxAllowedUL-ChannelRequirement UL-Channel CHOICE (CHOICE (CHO
                                             MaxAllowedUL-TX-Power
                                                                                       OPTIONAL,
                                           UL-ChannelRequirement-r4
                                                                                       OPTIONAL,
                                                SEQUENCE {
                  -- dummy is not used in this version of specification, it should
                  -- not be sent and if received it should be ignored.
                                                      DL-PDSCH-Information
                                                                                     OPTIONAL
             },
             tdd
                                             NULL
         dl-CommonInformation
                                             DL-CommonInformation-r4
                                                                                      OPTIONAL.
         dl-InformationPerRL-List
                                           DL-InformationPerRL-List-r4
}
TransportChannelReconfiguration-r5-IEs ::= SEQUENCE {
     -- User equipment IEs
         integrityProtectionModeInfo
                                            IntegrityProtectionModeInfo
                                                                                      OPTIONAL.
         cipheringModeInfo
                                             CipheringModeInfo
                                                                                      OPTIONAL,
         activationTime
                                             ActivationTime
                                                                                       OPTIONAL,
         new-U-RNTI
                                             U-RNTI
         new-C-RNTI
                                             C-RNTI
                                                                                       OPTIONAL,
         -- The IE "new-DSCH-RNTI" should not be included in FDD mode, and if received
         -- the UE behaviour is unspecified
         new-DSCH-RNTI
                                             DSCH-RNTI
         new-H-RNTI
                                             H-RNTI
                                                                                      OPTIONAL,
         rrc-StateIndicator
                                             RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff
                                            UTRAN-DRX-CycleLengthCoefficient
                                                                                      OPTIONAL,
    -- Core network IEs
         cn-InformationInfo
                                             CN-InformationInfo
                                                                                       OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity
                                            URA-Identity
                                                                                       OPTIONAL,
    -- Radio bearer IEs
         dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
    -- Transport channel IEs
         ul-CommonTransChInfo
                                             UL-CommonTransChInfo-r4
                                                                                       OPTIONAL.
         ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList
                                                                                      OPTIONAL,
         -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification, -- they should not be sent and if received they should be ignored.
         dummy
                                             CHOICE {
             fdd
                                                  SEQUENCE {
                                                      CPCH-SetID
                  dummy1
                                                                                       OPTIONAL,
                                                       DRAC-StaticInformationList OPTIONAL
                  dummy2
                                                  NULL
                                                                                      OPTIONAL,
         dl-CommonTransChInfo DL-CommonTransChInfo-r4 dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5
                                                                                      OPTIONAL,
    -- Physical channel IEs
         frequencyInfo
                                             FrequencyInfo
                                                                                      OPTIONAL,
         maxAllowedUL-TX-Power
                                             MaxAllowedUL-TX-Power
                                                                                       OPTIONAL,
         maxAllowedUL-TX-PowerMaxAllowedul-ChannelRequirementUL-Channel UL-Channel UL-Channel CHOICE {
                                             UL-ChannelRequirement-r5
             fdd
                                               SEQUENCE {
                  -- dummy is not used in this version of specification, it should
                  -- not be sent and if received it should be ignored.
                                                      DL-PDSCH-Information
                  dummv
             },
             tdd
                                             NULL
```

```
dl-HSPDSCH-Information DL-HSPDSCH-Information dl-CommonInformation DL-CommonInformation-r5
                                                                                                                                              OPTIONAL.
                                                                                                                                             OPTIONAL,
               dl-InformationPerRL-List DL-InformationPerRL-List-r5
                                                                                                                                            OPTIONAL
}
TransportChannelReconfiguration-v690ext-IEs ::= SEQUENCE {
       -- User Equipment IEs
              delayRestrictionFlag
                                                                       DelayRestrictionFlag
       -- Core network IEs
               primary-plmn-Identity
                                                                        PLMN-Identity
                                                                                                                                              OPTIONAL.
       -- Physical channel IEs
               -- The IE harq-Preamble-Mode should not be used in the r3 and r4 versions of the message
               -- If included in the r3 or r4 version of the message, the UE should ignore the IE
               harq-Preamble-Mode HARQ-Preamble-Mode
                                                                                                                                             OPTIONAL,
                                                                         BEACON-PL-Est
              beaconPLEst
                                                                                                                                             OPTIONAL.
                                                                      ENUMERATED { true }
               postVerificationPeriod
                                                                                                                                             OPTIONAL,
                                                                          DHS-Sync
               dhs-svnc
                                                                                                                                             OPTIONAL,
               timingMaintainedSynchInd
                                                                        TimingMaintainedSynchInd
                                                                                                                                             OPTIONAL.
       -- MBMS IEs
              mbms-PL-ServiceRestrictInfo MBMS-PL-ServiceRestrictInfo-r6
                                                                                                                                             OPTIONAL
}
TransportChannelReconfiguration-r6-IEs ::= SEQUENCE {
       -- User equipment IEs
              User equipment IEs
integrityProtectionModeInfo
cipheringModeInfo
activationTime
delayRestrictionFlag
new-U-RNTI
U-RNTI
CRAFT
C
                                                                                                                                            OPTIONAL,
                                                                                                                                             OPTIONAL,
                                                                                                                                             OPTIONAL,
                                                                                                                                              OPTIONAL,
               new-C-RNTI
                                                                          C-RNTI
                                                                                                                                              OPTIONAL.
               -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
               -- and if received the UE behaviour is unspecified
               new-DSCH-RNTI
                                                                         DSCH-RNTI
                                                                                                                                              OPTIONAL,
               new-H-RNTI
                                                                         H-RNTI
                                                                                                                                               OPTIONAL,
               newPrimary-E-RNTI
                                                                          E-RNTI
                                                                                                                                               OPTIONAL,
              newSecondary-E-RNTI E-RNTI OPTIONAL,
rrc-StateIndicator RRC-StateIndicator,
utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
       -- Core network IEs
              cn-InformationInfo
                                                                         CN-InformationInfo-r6
                                                                                                                                              OPTIONAL,
       -- UTRAN mobility IEs
              ura-Identity
                                                                        URA-Identity
                                                                                                                                              OPTIONAL.
       -- Radio bearer IEs
              dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
       -- Transport channel IEs
                                                                      UL-CommonTransChInfo-r4
              ul-CommonTransChInfo
                                                                                                                                              OPTIONAL.
              ul-AddReconfTransChInfoListUL-AddReconfTransChInfoList-r6dl-CommonTransChInfoDL-CommonTransChInfo-r4dl-AddReconfTransChInfoListDL-AddReconfTransChInfoList-r5
                                                                                                                                             OPTIONAL,
                                                                                                                                              OPTIONAL,
                                                                                                                                             OPTIONAL,
       -- Physical channel IEs
              frequencyInfo FrequencyInfo
maxAllowedUL-TX-Power
ul-DPCH-Info UL-DPCH-Info-r6
ul-EDCH-Information UL-EDCH-Information-r6
dl-HSPDSCH-Information DL-HSPDSCH-Information-r6
dl-CommonInformation DL-CommonInformation-r6
dl-InformationPerRL-List DL-InformationPerRL-List-r6
                                                                                                                                              OPTIONAL,
                                                                                                                                             OPTIONAL,
                                                                                                                                             OPTIONAL,
                                                                                                                                             OPTIONAL,
                                                                                                                                              OPTIONAL,
                                                                                                                                             OPTIONAL,
       -- MBMS IEs
              mbms-PL-ServiceRestrictInfo MBMS-PL-ServiceRestrictInfo-r6
                                                                                                                                           OPTIONAL
}
TransportChannelReconfiguration-v6b0ext-IEs ::= SEQUENCE {
       -- Physical channel IEs
              dl-InformationPerRL-List-v6b0ext DL-InformationPerRL-List-v6b0ext OPTIONAL
}
{\tt TransportChannelReconfiguration-r7-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
        -- User equipment IEs
               Jser equipment IES
integrityProtectionModeInfo IntegrityProtectionModeInfo-r7 OPTIONAL,
cipheringModeInfo CipheringModeInfo-r7 OPTIONAL,
              cipheringModeInfo
               activationTime
                                                                         ActivationTime
                                                                                                                                              OPTIONAL.
                                                                         DelayRestrictionFlag
               delayRestrictionFlag
                                                                                                                                              OPTIONAL,
               new-U-RNTI
                                                                        U-RNTI
                                                                                                                                              OPTIONAL,
               new-C-RNTI
                                                                          C-RNTI
                                                                                                                                              OPTIONAL,
               -- The IE "new-DSCH-RNTI" should not be included in FDD mode,
               -- and if received the UE behaviour is unspecified
               new-DSCH-RNTI
                                                                          DSCH-RNTI
                                                                                                                                              OPTIONAL,
```

```
new-H-RNTI
                                                    H-RNTI
                                                                                                     OPTIONAL,

      newPrimary-E-RNTI
      E-RNTI
      OPTIONAL,

      newSecondary-E-RNTI
      E-RNTI
      OPTIONAL,

      rrc-StateIndicator
      RRC-StateIndicator,
      OPTIONAL,

      ueMobilityStateIndicator
      High-MobilityDetected
      OPTIONAL,

      utran-DRX-CycleLengthCoeff
      UTRAN-DRX-CycleLengthCoefficient-r7
      OPTIONAL,

          newPrimary-E-RNTI
                                                    E-RNTI
                                                                                                     OPTIONAL,
     -- Core network IEs
          cn-InformationInfo
                                                  CN-InformationInfo-r6
                                                                                                     OPTIONAL,
     -- UTRAN mobility IEs
          ura-Identity
                                                    URA-Identity
                                                                                                     OPTIONAL,
          supportForChangeOfUE-Capability BOOLEAN
                                                                                                     OPTIONAL,
          responseToChangeOfUE-Capability ENUMERATED { true }
                                                                                                    OPTIONAL.
     -- Radio bearer IEs
          dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
     -- Transport channel IEs
          ul-CommonTransChInfo-r4
ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList-r7
dl-CommonTransChInfo-r4
DL-CommonTransChInfo-r4
DL-AddReconfTransChInfoList-r7
                                                                                                    OPTIONAL,
                                                                                                   OPTIONAL,
                                                                                                    OPTIONAL,
                                                                                                  OPTIONAL.
     -- Physical channel IEs
                                                   FrequencyInfo
                                                                                                    OPTIONAL.
          frequencyInfo
          multi-frequencyInfo Multi-frequencyInfo-LCR-r7
dtx-drx-TimingInfo DTX-DRX-TimingInfo-r7
dtx-drx-Info DTX-DRX-Info-r7
                                                                                                  OPTIONAL,
                                                                                                    OPTIONAL,
                                                                                                   OPTIONAL,
         dtx-drx-Info

hs-scch-LessInfo

mimoParameters

maxAllowedUL-TX-Power

ul-DPCH-Info

ul-EDCH-Information

dl-HSPDSCH-Information

dl-CommonInformation

dl-InformationPerRL-List

DTX-DRX-Info-r7

MS-SCCH-LessInfo-r7

MIMO-Parameters-r7

MaxAllowedUL-TX-Power

UL-DPCH-Info-r7

UL-EDCH-Info-r7

UL-EDCH-Information-r7

DL-HSPDSCH-Information-r7

DL-CommonInformation-r7
                                                                                                   OPTIONAL,
                                                                                                   OPTIONAL,
                                                                                                   OPTIONAL,
                                                                                                   OPTIONAL,
                                                                                                   OPTIONAL,
                                                                                                   OPTIONAL,
                                                                                                    OPTIONAL,
                                                                                                   OPTIONAL,
     -- MBMS IEs
          mbms-PL-ServiceRestrictInfo MBMS-PL-ServiceRestrictInfo-r6
                                                                                                  OPTIONAL
}
TransportChannelReconfiguration-v770ext-IEs ::= SEQUENCE {
    -- User equipment IEs
          ueMobilityStateIndicator High-MobilityDetected
                                                                                                   OPTIONAL
}
{\tt TransportChannelReconfiguration-v780ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
     -- Physical channel IEs
          hs-DSCH-TBSizeTable
                                                    HS-DSCH-TBSizeTable
                                                                                                    OPTIONAL
}
TransportChannelReconfiguration-v7d0ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
          ul-EDCH-Information
                                                    UL-EDCH-Information-ext
                                                                                                  OPTIONAL
}
TransportChannelReconfiguration-v7f0ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
     mimoParameters
                                                     MIMO-Parameters-v7f0ext
                                                                                                  OPTIONAL
}
TransportChannelReconfiguration-v7g0ext-IEs ::= SEQUENCE {
     -- Physical channel IEs
    mimoParameters
                                                    MIMO-Parameters-v7q0ext
                                                                                                  OPTIONAL
}
__ ****************************
-- TRANSPORT CHANNEL RECONFIGURATION COMPLETE
__ ***************
TransportChannelReconfigurationComplete ::= SEQUENCE {
     -- User equipment IEs
          rrc-TransactionIdentifier RRC-TransactionIdentifier, ul-IntegProtActivationInfo IntegrityProtActivationInfo
                                                                                                    OPTIONAL,
           -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
          ul-TimingAdvance
                                                  UL-TimingAdvance
                                                                                                    OPTIONAL,
     -- Radio bearer IEs
          count-C-ActivationTime
                                                   ActivationTime
                                                                                                     OPTIONAL,
           -- dummy is not used in this version of the specification and
           -- it should be ignored by the receiver.
                                                    RB-ActivationTimeInfoList
                                                                                                   OPTIONAL,
          dummy
```

```
OPTIONAL,
              ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo
              laterNonCriticalExtensions
                                                                   SEQUENCE {
                    -- Container for additional R99 extensions
                    {\tt transportChannelReconfigurationComplete-r3-add-ext} \qquad {\tt BIT\ STRING} \qquad {\tt OPTIONAL},
                    v770NonCriticalExtensions SEQUENCE {
                          transportChannelReconfigurationComplete-v770ext
                                                              TransportChannelReconfigurationComplete-v770ext-IEs,
                           nonCriticalExtensions
                                                                                  SEQUENCE {}
                                                                                                             OPTIONAL
                    } OPTIONAL
                    OPTIONAL
}
TransportChannelReconfigurationComplete-v770ext-IEs ::= SEQUENCE {
              -- TABULAR: EXT-UL-TimingAdvance is applicable for TDD mode only.
                                                                           EXT-UL-TimingAdvance OPTIONAL,
ENUMERATED { true } OPTIONAL
              ext-UL-TimingAdvance
             deferredMeasurementControlReading
                                                                                  ENUMERATED { true }
}
__ ***************
-- TRANSPORT CHANNEL RECONFIGURATION FAILURE
__ ****************
TransportChannelReconfigurationFailure ::= SEQUENCE {
       -- User equipment IEs
             rrc-TransactionIdentifier
                                                               RRC-TransactionIdentifier,
             failureCause
laterNonCriticalExtensions
failureCauseWithProtErr,
SEQUENCE {
                    -- Container for additional R99 extensions
                    transportChannelReconfigurationFailure-r3-add-ext BIT STRING
                                                                                                                                              OPTIONAL,
                                                               SEQUENCE {} OPTIONAL
                    nonCriticalExtensions
              } OPTIONAL
}
__ ********************
-- TRANSPORT FORMAT COMBINATION CONTROL in AM or UM RLC mode
__ *****************
TransportFormatCombinationControl ::= SEQUENCE {
              -- rrc-TransactionIdentifier is always included in this version of the specification
             rrc-TransactionIdentifier RRC-TransactionIdentifier OPTIONAL,
              modeSpecificInfo
                                                                        CHOICE {
                    fdd
                                                                                  NULL,
                                                                                  SEQUENCE {
                    t.dd
                           tfcs-ID
                                                                                         TFCS-Identity OPTIONAL
              dpch-TFCS-InUplink
                                                                           TFC-Subset,
             activationTimeForTFCSubset
                                                                    ActivationTime
                                                                                                                                         OPTIONAL.
             tfc-ControlDuration TFC-ControlDuration
laterNonCriticalExtensions SEQUENCE {
   -- Container for additional R99 extensions
                                                                                                                                         OPTIONAL,
                         nonCriticalExtensions SEQUENCE {} OPTIONAL
                    \verb|transportFormatCombinationControl-r3-add-ext|\\
                                                                                                                                       OPTIONAL,
              } OPTIONAL
__ ***************
-- TRANSPORT FORMAT COMBINATION CONTROL FAILURE
__ *****************
TransportFormatCombinationControlFailure ::= SEQUENCE {
             rrc-TransactionIdentifier RRC-TransactionIdentifier, failureCause FailureCauseWithProtErr, SEQUENCE SE
       -- User equipment IEs
                    transportFormatCombinationControlFailure-r3-add-ext
                                                                                                                  BIT STRING
                                                                                                                                              OPTIONAL,
                                                                        SEQUENCE {} OPTIONAL
                    nonCriticalExtensions
              } OPTIONAL
}
```

```
-- UE CAPABILITY ENQUIRY
__ ***************
UECapabilityEnquiry ::= CHOICE {
                                    SEQUENCE {
        ueCapabilityEnquiry-r3
        -- Container for additional R99 extensions
            ueCapabilityEnquiry-r3-add-ext BIT STRING v4b0NonCriticalExtensions SEQUENCE {
                                                                 OPTIONAL,
                ueCapabilityEnquiry-v4b0ext UECapabilityEnquiry-v4b0ext-IEs, v590NonCriticalExtensions SEQUENCE {
                    ueCapabilityEnquiry-v590ext UECapabilityEnquiry-v590ext-IEs, v770NonCriticalExtensions SEQUENCE {
                         ueCapabilityEnquiry-v770ext UECapabilityEnquiry-v770ext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
                         nonCriticalExtensions
                         OPTIONAL
                    OPTIONAL
                OPTIONAL
        } OPTIONAL
                                    SEQUENCE {
    later-than-r3
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions
                                         SEQUENCE {}
}
UECapabilityEnquiry-r3-IEs ::= SEQUENCE {
     -- User equipment IEs
       User equipment IES
rrc-TransactionIdentifier RRC-TransactionIdentifier,
capabilityUpdateRequirement CapabilityUpdateRequirement
}
UECapabilityEnquiry-v4b0ext-IEs ::= SEQUENCE {
       capabilityUpdateRequirement-r4-ext CapabilityUpdateRequirement-r4-ext
}
UECapabilityEnquiry-v590ext-IES ::= SEQUENCE {
        systemSpecificCapUpdateReq SystemSpecificCapUpdateReq-v590ext
UECapabilityEnquiry-v770ext-IEs ::= SEQUENCE {
        __ *****************
-- UE CAPABILITY INFORMATION
__ ****************
UECapabilityInformation ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier RRC-TransactionIdentifier OPTIONAL,
ue-RadioAccessCapability IIE-RadioAccessCapability OPTIONAL
        ue-RadioAccessCapability
                                         UE-RadioAccessCapability
                                                                               OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList
v370NonCriticalExtensions SEQUENCE {
            ueCapabilityInformation-v370ext UECapabilityInformation-v370ext,
            v380NonCriticalExtensions SEQUENCE {
                ueCapabilityInformation-v380ext
v3a0NonCriticalExtensions
UECapabilityInformation-v380ext-IEs,
v3a0NonCriticalExtensions
                     ueCapabilityInformation-v3a0ext
laterNonCriticalExtensions
UECapabilityInformation-v3a0ext-IEs,
SEQUENCE {
                         -- Container for additional R99 extensions
                         ueCapabilityInformation-r3-add-ext BIT STRING
                                      (CONTAINING UECapabilityInformation-r3-add-ext-IEs) OPTIONAL,
                         -- Reserved for future non critical extension
                         v4b0NonCriticalExtensions SEQUENCE {
                             ueCapabilityInformation-v4b0ext UECapabilityInformation-v4b0ext, v590NonCriticalExtensions SEQUENCE {
                                 ueCapabilityInformation-v590ext UECapabilityInformation-v590ext, v5c0NonCriticalExtensions SEQUENCE {
                                     ueCapabilityInformation-v5c0ext
                                                                     UECapabilityInformation-v5c0ext,
                                     v690NonCriticalExtensions
                                                                           SEQUENCE {
```

```
ueCapabilityInformation-v690ext
                                                                UECapabilityInformation-v690ext-IEs,
                                        nonCriticalExtensions
                                                                        SEQUENCE {}
                                                                                       OPTIONAL
                                           OPTIONAL
                                        OPTIONAL
                                    OPTIONAL
                                OPTIONAL
                            OPTIONAL
                        OPTIONAL
           }
                    OPTIONAL
                OPTIONAL
}
UECapabilityInformation-v370ext ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability-v370ext
                                              UE-RadioAccessCapability-v370ext
                                                                                        OPTIONAL
}
UECapabilityInformation-v380ext-IEs ::= SEQUENCE {
    -- User equipment IEs
                                                UE-RadioAccessCapability-v380ext
       ue-RadioAccessCapability-v380ext
                                                                                        OPTIONAL,
        dl-PhysChCapabilityFDD-v380ext
                                                DL-PhysChCapabilityFDD-v380ext
}
UECapabilityInformation-v3a0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability-v3a0ext
                                               UE-RadioAccessCapability-v3a0ext
                                                                                        OPTIONAL
}
UECapabilityInformation-r3-add-ext-IEs ::= SEQUENCE {
        ueCapabilityInformation-v650extUECapabilityInformation-v650ext-IESv680NonCriticalExtensionsSEQUENCE {
                                                                                    OPTIONAL.
            ueCapabilityInformation-v680ext
                                                UECapabilityInformation-v680ext-IEs,
                                                SEQUENCE {
            v7e0NonCriticalExtensions
                                                UECapabilityInformation-v7e0ext-IEs,
                {\tt ueCapabilityInformation-v7e0ext}
                v7f0NonCriticalExtensions
                                                   SEQUENCE {
                    ueCapabilityInformation-v7f0ext UECapabilityInformation-v7f0ext-IEs,
                                                        SEQUENCE {}
                    nonCriticalExtensions
                                                                      OPTIONAL
                       OPTIONAL
                    OPTIONAL
                OPTIONAL
}
UECapabilityInformation-v4b0ext ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability-v4b0ext
                                               UE-RadioAccessCapability-v4b0ext
                                                                                        OPTIONAL
}
UECapabilityInformation-v590ext ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability-v3q0ext
                                                UE-RadioAccessCapability-v3q0ext
                                                                                        OPTIONAL,
        ue-RadioAccessCapability-v590ext
                                                UE-RadioAccessCapability-v590ext
                                                                                        OPTIONAL,
    -- Other IEs
       ue-RATSpecificCapability-v590ext InterRAT-UE-RadioAccessCapability-v590ext
}
UECapabilityInformation-v5c0ext ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability-v5c0ext
                                                UE-RadioAccessCapability-v5c0ext
                                                                                        OPTIONAL
}
UECapabilityInformation-v650ext-IEs ::= SEQUENCE {
      ue-RadioAccessCapability-v650ext
                                               UE-RadioAccessCapability-v650ext
}
UECapabilityInformation-v680ext-IEs ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability-v680ext
                                              UE-RadioAccessCapability-v680ext
}
UECapabilityInformation-v690ext-IEs ::= SEQUENCE {
    -- User equipment IEs
       ueCapabilityContainer
                                            BIT STRING
                                                (CONTAINING UE-CapabilityContainer-IEs) OPTIONAL
}
UECapabilityInformation-v7e0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
```

```
ue-RadioAccessCapability
                                                 UE-RadioAccessCapability-v7e0ext
}
UECapabilityInformation-v7f0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
       ue-RadioAccessCapability
                                                  UE-RadioAccessCapability-v7f0ext OPTIONAL
}
__ ***************
-- UE CAPABILITY INFORMATION CONFIRM
__ *****************
UECapabilityInformationConfirm ::= CHOICE {
                                      SEOUENCE {
        ueCapabilityInformationConfirm-r3
                                      UECapabilityInformationConfirm-r3-IEs,
             rNonCriticalExtensions
-- Container for additional R99 extensions
-- Extension Confirm-r3-add-ext BIT STRING
        laterNonCriticalExtensions
            ueCapabilityInformationConfirm-r3-add-ext
                                                                                OPTIONAL,
            v770NonCriticalExtensions SEQUENCE {
    ueCapabilityInformationConfirm-v770ext UECapabilityInformationConfirm-v770ext-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
                OPTIONAL
        ) OPTIONAL
       er-than-r3 SEQUENCE {
rrc-TransactionIdentifier RRC-TransactionIdentifier,
SEQUENCE {}
    later-than-r3
}
UECapabilityInformationConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier RRC-TransactionIdentifier
}
UECapabilityInformationConfirm-v770ext-IEs ::= SEQUENCE {
   -- User equipment IEs
        acceptanceOfChangeOfCapability ENUMERATED {
                                              refused, accepted, acceptedWithReconfigurationToFollow
                                                   OPTIONAL
}
__ ***************
-- UPLINK DIRECT TRANSFER
__ *****************
UplinkDirectTransfer ::= SEQUENCE {
    -- Core network IEs
                               CN-DomainIdentity,
NAS-Message,
        cn-DomainIdentity
        nas-Message
        nas-Message NAS-Message,

Measurement IEs

measuredResultsOnRACH MeasuredResultsOnRACH
laterNonCriticalExtensions SEQUENCE {
    -- Measurement IEs
                                                                                OPTIONAL,
             -- Container for additional R99 extensions
            uplinkDirectTransfer-r3-add-ext BIT STRING OPTIONAL, v690NonCriticalExtensions SEQUENCE {
                uplinkDirectTransfer-v690ext UplinkDirectTransfer-v690ext-IEs,
v7g0NonCriticalExtensions SEQUENCE {
   uplinkDirectTransfer-v7g0ext UplinkDirectTransfer-v7g0ext-IEs,
   nonCriticalExtensions SEQUENCE {} OPTIONAL
                    OPTIONAL
                 OPTIONAL
           OPTIONAL
}
UplinkDirectTransfer-v690ext-IEs ::= SEQUENCE {
    -- Measurement IEs
    measuredResultsOnRACHinterFreq
                                        MeasuredResultsOnRACHinterFreq
                                                                                         OPTIONAL
}
UplinkDirectTransfer-v7g0ext-IEs ::= SEQUENCE {
    -- Measurement IEs
        measuredResultsOnRACH-v7g0ext
                                             MeasuredResultsOnRACH-v7g0ext
                                                                                    OPTIONAL
```

```
}
  **************
-- UPLINK PHYSICAL CHANNEL CONTROL
__ ***************
UplinkPhysicalChannelControl ::= CHOICE {
                                 SEQUENCE {
       \verb|uplinkPhysicalChannelControl-r3-IEs|, \\
                                         SEQUENCE {
       laterNonCriticalExtensions
           -- Container for additional R99 extensions
                                                                  OPTIONAL,
           uplinkPhysicalChannelControl-r3-add-ext
                                                    BIT STRING
           v4b0NonCriticalExtensions SEQUENCE { uplinkPysicalChannelControl-v4b0ext UplinkPhysicalChannelControl-v4b0ext-IEs,
               -- Extension mechanism for non-release 4 information
               noncriticalExtensions
                                             SEQUENCE {}
                                                                           OPTIONAL
               OPTIONAL
       }
          OPTIONAL
                                 SEQUENCE {
   later-than-r3
                                RRC-TransactionIdentifier,
       rrc-TransactionIdentifier
       criticalExtensions
                                     CHOICE {
                                      SEOUENCE {
               uplinkPhysicalChannelControl-r4 UplinkPhysicalChannelControl-r4-IEs,
               v4d0NonCriticalExtensions
                                                SEQUENCE {
                   -- Container for adding non critical extensions after freezing REL-5
                   uplinkPhysicalChannelControl-r4-add-ext BIT STRING
                                                                          OPTIONAL,
                   v690NonCriticalExtensions SEQUENCE {
    uplinkPhysicalChannelControl-v690ext UplinkPhysicalChannelControl-v690ext-IEs,
                                                   SEQUENCE {} OPTIONAL
                      nonCriticalExtensions
                      OPTIONAL
                  OPTIONAL
                                     CHOICE {
           criticalExtensions
                                             SEQUENCE {
                   uplinkPhysicalChannelControl-r5 UplinkPhysicalChannelControl-r5-IEs,
                   -- Container for adding non critical extensions after freezing REL-6 \,
                   uplinkPhysicalChannelControl-r5-add-ext
                                                          BIT STRING OPTIONAL,
                   v690NonCriticalExtensions SEQUENCE {
                      uplinkPhysicalChannelControl-v690ext
                                                            UplinkPhysicalChannelControl-v690ext-IEs,
                      v6a0NonCriticalExtensions SEQUENCE{
                          uplinkPhysicalChannelControl-v6a0ext
                                                             UplinkPhysicalChannelControl-v6a0ext-IEs,
                                                        SEQUENCE {} OPTIONAL
                          nonCriticalExtensions
                          OPTIONAL
                   }
                      OPTIONAL
               criticalExtensions
                                             CHOICE {
                                                SEQUENCE {
                      \verb|uplinkPhysicalChannelControl-r7-UplinkPhysicalChannelControl-r7-IEs|,
                       -- Container for adding non critical extensions after freezing REL-8
                      uplinkPhysicalChannelControl-r7-add-ext
                                                               BIT STRING
                                                    SEQUENCE { } OPTIONAL
                      nonCriticalExtensions
                   criticalExtensions
                                                SEQUENCE {}
              }
          }
      }
   }
UplinkPhysicalChannelControl-r3-IEs ::= SEQUENCE {
   -- User equipment IEs
       rrc-TransactionIdentifier
                                    RRC-TransactionIdentifier,
    -- Physical channel IEs
       ccTrCH-PowerControlInfo
                                    CCTrCH-PowerControlInfo
                                                                       OPTIONAL,
                                                                       OPTIONAL,
       timingAdvance
                                     UL-TimingAdvanceControl
       alpha
                                     Alpha
                                   SpecialBurstScheduling
       specialBurstScheduling
                                                                       OPTIONAL,
       prach-ConstantValue
                                     ConstantValueTdd
                                                                       OPTIONAL,
                                     ConstantValueTdd
       pusch-ConstantValue
                                                                        OPTIONAL
}
UplinkPhysicalChannelControl-v4b0ext-IEs ::= SEQUENCE {
   -- In case of TDD, openLoopPowerControl-IPDL-TDD is included instead of IE
    -- up-IPDL-Parameters in up-OTDOA-AssistanceData
```

```
openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4
                                                                   OPTIONAL
}
UplinkPhysicalChannelControl-r4-IEs ::= SEQUENCE {
    -- Physical channel IEs
       ccTrCH-PowerControlInfo
                                      CCTrCH-PowerControlInfo-r4
                                                                        OPTIONAL,
       specialBurstScheduling
                                      SpecialBurstScheduling
                                                                         OPTIONAL,
                                      CHOICE {
       tddOption
           tdd384
                                          SEQUENCE {
               timingAdvance
                                              UL-TimingAdvanceControl-r4 OPTIONAL,
               alpha
                                              Alpha
               prach-ConstantValue
                                              ConstantValueTdd
                                                                         OPTIONAL.
                                                                         OPTIONAL,
               pusch-ConstantValue
                                              ConstantValueTdd
               openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4
                                                                                OPTIONAL
           tdd128
                                          SEQUENCE {
               ul-SynchronisationParameters
                                              UL-SynchronisationParameters-r4 OPTIONAL
       }
}
UplinkPhysicalChannelControl-r5-IEs ::= SEQUENCE {
    -- Physical channel IEs
                                 CCTrCH-PowerControlInfo-r5
       ccTrCH-PowerControlInfo
       specialBurstScheduling
                                      SpecialBurstScheduling
       tddOption
                                      CHOICE {
           tdd384
                                          SEQUENCE {
               timingAdvance
                                              UL-TimingAdvanceControl-r4 OPTIONAL,
               alpha
                                              Alpha
               prach-ConstantValue
                                                                         OPTIONAL.
                                              ConstantValueTdd
               pusch-ConstantValue
                                              ConstantValueTdd
                                                                         OPTIONAL,
               openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4
                                                                                 OPTIONAL,
               hs-SICH-PowerControl
                                              HS-SICH-Power-Control-Info-TDD384
                                                                                OPTIONAL
           tdd128
                                          SEQUENCE {
               ul-SynchronisationParameters
                                              UL-SynchronisationParameters-r4 OPTIONAL
       }
}
UplinkPhysicalChannelControl-v690ext-IEs ::= SEQUENCE {
   -- Physical Channel IEs
       beaconPLEst
                                      BEACON-PL-Est
                                                                         OPTIONAL
UplinkPhysicalChannelControl-v6a0ext-IEs ::= SEQUENCE {
    -- Physical Channel IEs
       desired-HS-SICH-PowerLevel
                                      INTEGER (-120..-58)
                                                                         OPTIONAL.
                                      ENUMERATED { s1, s2, s3 , spare1 } OPTIONAL
       tpc-Step-Size
}
UplinkPhysicalChannelControl-r7-IEs ::= SEQUENCE {
    -- Physical channel IEs
                                      CCTrCH-PowerControlInfo-r7
       ccTrCH-PowerControlInfo
       specialBurstScheduling
                                      SpecialBurstScheduling
                                      CHOICE {
       tddOption
           tdd384
                                          SEQUENCE {
               timingAdvance
                                              UL-TimingAdvanceControl-r4 OPTIONAL,
               alpha
                                              Alpha
                                                                         OPTIONAL.
               prach-ConstantValue
                                              ConstantValueTdd
                                                                         OPTIONAL.
               pusch-ConstantValue
                                              ConstantValueTdd
                                                                         OPTIONAL,
               openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4
                                                                                 OPTIONAL.
                                              HS-SICH-Power-Control-Info-TDD384 OPTIONAL
               hs-SICH-PowerControl
           },
           tdd768
                                          SEQUENCE {
               timingAdvance
                                              UL-TimingAdvanceControl-r7 OPTIONAL,
               alpha
                                              Alpha
                                                                         OPTIONAL,
               prach-ConstantValue
                                              ConstantValueTdd
                                                                         OPTIONAL,
               pusch-ConstantValue
                                              ConstantValueTdd
                                                                         OPTIONAL.
               openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4
                                                                                 OPTIONAL.
               hs-SICH-PowerControl
                                              HS-SICH-Power-Control-Info-TDD768
           tdd128
                                          SEOUENCE {
               ul-SynchronisationParameters
                                              UL-SynchronisationParameters-r4 OPTIONAL,
               desired-HS-SICH-PowerLevel
                                              INTEGER (-120..-58) OPTIONAL,
               tpc-Step-Size
                                              ENUMERATED { s1, s2, s3 , spare1 } OPTIONAL
           }
       }
```

```
}
__ ***************
-- URA UPDATE
__ ***************
URAUpdate ::= SEQUENCE {
     -- User equipment IEs
         Jser equipment IES
u-RNTI U-RNTI,
ura-UpdateCause URA-UpdateCause,
protocolErrorIndicator ProtocolErrorIndicatorWithMoreInfo,
laterNonCriticalExtensions SEQUENCE {
        u-RNTI
              -- Container for additional R99 extensions
              uraUpdate-r3-add-ext BIT STRING
                                 (CONTAINING URAUpdate-r3-add-ext-IEs) OPTIONAL,
              v770NonCriticalExtensions SEQUENCE {
    uraUpdate-v770ext UraUpdate-v770ext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
                  OPTIONAL
          ) OPTIONAL
}
}
UraUpdate-v770ext-IEs ::= SEQUENCE {
     -- User equipment IEs
    support-hsdschReception-CellUraPch ENUMERATED { true } support-hsdschReception-CellFach ENUMERATED { true }
                                                                                  OPTIONAL,
OPTIONAL
}
URAUpdate-v7e0ext-IEs ::= SEQUENCE {
   -- User equipment IEs
         supportForTwoDRXSchemesInPCH ENUMERATED { true }
                                                                                         OPTIONAL
}
__ ***************
-- URA UPDATE CONFIRM
__ ****************
URAUpdateConfirm ::= CHOICE {
          -- Container for additional R99 extensions
              v690NonCriticalExtensions SEQUENCE {
    uraUpdateConfirm-v690ext nonCriticalExtensions SEQUENCE {
        V690NonCriticalExtensions SEQUENCE {
            OPTIONAL SEQUENCE {}
            OPTIONAL SEQUENCE {}

                 OPTIONAL
        POPTIONAL

SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions CHOICE {
        r5 SEQUENCE {
            uraUpdateConfirm-r5 URAUpdateConfirm-r5-IEs,
            v690NonCriticalExtensions SEQUENCE {
            uraUpdateConfirm-v690ext URAUpdateConfirm-v690ext-IEs,
            ponCriticalExtensions SEQUENCE {} OPTIONAL
          } OPTIONAL
     later-than-r3
              -- Container for adding non critical extensions after freezing REL-8
                   uraUpdateConfirm-r7-add-ext BIT STRING OPTIONAL, nonCriticalExtensions SEQUENCE {} OPTIONAL
                   criticalExtensions SEQUENCE {}
              }
          }
```

```
}
}
URAUpdateConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
                                     RRC-TransactionIdentifier,
       rrc-TransactionIdentifier
       integrityProtectionModeInfo
                                       IntegrityProtectionModeInfo
                                                                          OPTIONAL.
       cipheringModeInfo
                                                                          OPTIONAL,
                                      CipheringModeInfo
       new-U-RNTI
                                      U-RNTI
                                                                          OPTIONAL,
       new-C-RNTI
                                       C-RNTI
                                                                          OPTIONAL,
       rrc-StateIndicator RRC-StateIndicator,
utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- CN information elements
       cn-InformationInfo
                                      CN-InformationInfo
                                                                          OPTIONAL,
    -- UTRAN mobility IEs
       ura-Identity
                                      URA-Identity
                                                                          OPTIONAL,
    -- Radio bearer IEs
       dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo
                                                                          OPTIONAL
}
URAUpdateConfirm-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        \verb|integrityProtectionModeInfo|\\
                                       IntegrityProtectionModeInfo
                                                                          OPTIONAL,
                                                                          OPTIONAL,
       cipheringModeInfo
                                       CipheringModeInfo
                                       U-RNTI
       new-U-RNTT
                                                                          OPTIONAL.
       new-C-RNTI
                                       C-RNTI
                                                                          OPTIONAL,
       rrc-stateIndicator RRC-StateIndicator,
utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient
                                                                        OPTIONAL,
    -- CN information elements
       cn-InformationInfo
                                       CN-InformationInfo
                                                                          OPTIONAL.
    -- UTRAN mobility IEs
       ura-Identity
                                      URA-Identity
                                                                          OPTIONAL,
    -- Radio bearer IEs
       dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5
                                                                          OPTIONAL
}
URAUpdateConfirm-v690ext-IEs ::= SEQUENCE {
   -- Core network IEs
                                         PLMN-Identity
       primary-plmn-Identity
                                                                          OPTIONAL
}
URAUpdateConfirm-r7-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo IntegrityProtectionModeInfo-r7
                                                                        OPTIONAL,
       cipheringModeInfo
                                      CipheringModeInfo-r7
                                                                          OPTIONAL,
       new-U-RNTI
                                       U-RNTI
                                                                          OPTIONAL,
                                      C-RNTI
       new-C-RNTI
       utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengt
                                                                          OPTIONAL.
                                      UTRAN-DRX-CycleLengthCoefficient-r7 OPTIONAL,
    -- CN information elements
       cn-InformationInfo
                                       CN-InformationInfo
                                                                          OPTIONAL,
       primary-plmn-Identity
                                      PLMN-Identity
                                                                          OPTIONAL,
    -- UTRAN mobility IEs
       ura-Identity
                                       URA-Identity
                                                                          OPTIONAL,
       supportForChangeOfUE-Capability BOOLEAN
                                                                          OPTIONAL,
    -- Radio bearer IEs
       dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5
                                                                         OPTIONAL
}
__ ***************
-- URA UPDATE CONFIRM for CCCH
__ ****************
URAUpdateConfirm-CCCH ::= CHOICE {
                                   SEQUENCE {
   r3
                                   URAUpdateConfirm-CCCH-r3-IEs,
        uraUpdateConfirm-CCCH-r3
                                          SEQUENCE {
        laterNonCriticalExtensions
            -- Container for additional R99 extensions
           uraUpdateConfirm-CCCH-r3-add-ext BIT STRING
           v690NonCriticalExtensions SEQUENCE {
    uraUpdateConfirm-v690ext
    nonCriticalExtensions SEQUENCE {} OPTIONAL
              OPTIONAL
          OPTIONAL
                                  SEQUENCE {
    later-than-r3
```

```
}
URAUpdateConfirm-CCCH-r3-IEs ::= SEQUENCE {
   -- User equipment IEs
      u-RNTI
                                  U-RNTI,
   -- The rest of the message is identical to the one sent on DCCH.
      uraUpdateConfirm
                                 URAUpdateConfirm-r3-IEs
}
__ ****************
-- UTRAN MOBILITY INFORMATION
__ ****************
UTRANMobilityInformation ::= CHOICE {
                               SEQUENCE {
       utranMobilityInformation-r3
v3a0NonCriticalExtensions
UTRANMobilityInformation-r3-IEs,
v3a0NonCriticalExtensions
          SEQUENCE {
          laterNonCriticalExtensions
              -- Container for additional R99 extensions
              utranMobilityInformation-r3-add-ext BIT STRING
                                                              OPTIONAL,
              v690NonCriticalExtensions SEQUENCE {
                 utranMobilityInformation-v690ext UtranMobilityInformation-v690ext-IEs,
                                                 SEQUENCE {}
                 nonCriticalExtensions
                                                               OPTIONAL
              OPTIONAL
                    OPTIONAL
          }
              OPTIONAL
                               SEQUENCE {
   later-than-r3
                              RRC-TransactionIdentifier,
CHOICE {
       rrc-TransactionIdentifier
       criticalExtensions
                                  CHOICE {
SEQUENCE {
          r5
              utranMobilityInformation-r5
v690NonCriticalExtensions
UTRANMobilityInformation-r5-IEs,
SEQUENCE {
                 utranMobilityInformation-v690ext UtranMobilityInformation-v690ext-IEs,
                 nonCriticalExtensions
                                             SEQUENCE { } OPTIONAL
              } OPTIONAL
          },
          criticalExtensions
                                          CHOICE {
                                            SEQUENCE {
                 utranMobilityInformation-r7
                                              UTRANMobilityInformation-r7-IEs,
                  -- Container for adding non critical extensions after freezing REL-8
                 utranMobilityInformation-r7-add-ext BIT STRING OPTIONAL, nonCriticalExtensions SEQUENCE {} OPTIONAL
                 nonCriticalExtensions
                                         SEQUENCE {}
              criticalExtensions
          }
      }
   }
}
UTRANMobilityInformation-r3-IEs ::= SEQUENCE {
   -- User equipment IEs
       rrc-TransactionIdentifier
                                   RRC-TransactionIdentifier,
       integrityProtectionModeInfo IntegrityProtectionModeInfo
                                                                  OPTIONAL,
       cipheringModeInfo
                                   CipheringModeInfo
                                                                   OPTIONAL,
      new-U-RNTI
                                   U-RNTI
                                                                   OPTIONAL,
      new-C-RNTT
                                   C-RNTT
                                                                   OPTIONAL.
      ue-ConnTimersAndConstants
                                   UE-ConnTimersAndConstants
                                                                   OPTIONAL.
   -- CN information elements
      cn-InformationInfo
                                   CN-InformationInfoFull
                                                                   OPTIONAL,
   -- UTRAN mobility IEs
      ura-Identity
                                  URA-Identity
                                                                   OPTIONAL,
   -- Radio bearer IEs
      dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo
                                                                  OPTIONAL,
   -- Extension mechanism for non- release99 information
      nonCriticalExtensions
                                  SEQUENCE {}
                                                 OPTIONAL
}
UTRANMobilityInformation-v3a0ext-IEs ::= SEQUENCE {
```

```
UTRANMobilityInformation-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
       OPTIONAL,
                                                                           OPTIONAL,
       new-U-RNTI
                                       U-RNTI
       new-C-RNTI
                                       C-RNTI
                                                                           OPTIONAL,
       ue-ConnTimersAndConstants
UE-ConnTimersAndConstants-r5
                                                                           OPTIONAL,
    -- CN information elements
       cn-InformationInfo
                                       CN-InformationInfoFull
                                                                           OPTIONAL,
    -- UTRAN mobility IEs
       ura-Identity
                                      URA-Identity
                                                                           OPTIONAL.
    -- Radio bearer IEs
       dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL
}
{\tt UtranMobilityInformation-v690ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
    -- Core network IEs
                                                                                OPTIONAL
       primary-plmn-Identity
}
{\tt UTRANMobilityInformation-r7-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
    -- User equipment IEs
       integrityProtectionModeInfo IntegrityProtectionModeInfo-r7
cipheringModeInfo CipheringModeInfo-r7
                                                                          OPTIONAL,
       cipheringModeInfo
                                       CipheringModeInfo-r7
                                                                           OPTIONAL.
       new-U-RNTI
                                       U-RNTI
                                                                           OPTIONAL,
       new-C-RNTI
                                       C-RNTI
                                                                           OPTIONAL,
   H-RNTI
ue-ConnTimersAndConstants
UE-ConnTimersAndConstants-r5

CN information elements
cn-InformationInfo
primary-plmn-Identity
UTRAN mobility IES
ura-Identity
URA-Identity
       new-H-RNTI
                                       H-RNTI
                                                                           OPTIONAL,
                                                                          OPTIONAL,
                                                                           OPTIONAL,
                                                                           OPTIONAL,
                                      URA-Identity
                                                                           OPTIONAL.
       supportForChangeOfUE-Capability BOOLEAN
                                                                           OPTIONAL,
    -- Radio bearer IEs
       dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL
}
__ ******************
-- UTRAN MOBILITY INFORMATION CONFIRM
__ ***************
UTRANMobilityInformationConfirm ::= SEQUENCE {
       User equipment IEs

rrc-TransactionIdentifier RRC-TransactionIdentifier,
ul-IntegProtActivationInfo IntegrityProtActivationInfo
    -- User equipment IEs
                                                                          OPTIONAL,
    -- Radio bearer IEs
       count-C-ActivationTime
                                      ActivationTime
                                                                          OPTIONAL,
        -- dummy is not used in this version of the specification and
        \operatorname{--} it should be ignored by the receiver.
       dummy RB-ActivationTimeInfoList OPTIONAL, ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo OPTIONAL,
                                      SEQUENCE {
        laterNonCriticalExtensions
            -- Container for additional R99 extensions
           utranMobilityInformationConfirm-r3-add-ext BIT STRING
                                                                          OPTIONAL,
           v770NonCriticalExtension
                                              SEQUENCE {
               utranMobilityInformationConfirm-v770ext
                                                   UTRANMobilityInformationConfirm-v770ext-IEs,
               nonCriticalExtensions
                                                   SEQUENCE { } OPTIONAL
               OPTIONAL
        ) OPTIONAL
}
UTRANMobilityInformationConfirm-v770ext-IEs ::= SEQUENCE {
   deferredMeasurementControlReading
                                                  ENUMERATED { true } OPTIONAL
****************
-- UTRAN MOBILITY INFORMATION FAILURE
__ ***************
UTRANMobilityInformationFailure ::= SEQUENCE {
    -- UE information elements
```

```
{\tt rrc-TransactionIdentifier} \qquad {\tt RRC-TransactionIdentifier},
                                    FailureCauseWithProtErr,
       failureCause
       laterNonCriticalExtensions
                                       SEQUENCE {
           -- Container for additional R99 extensions
           utranMobilityInformationFailure-r3-add-ext
                                                        BIT STRING
                                                                       OPTIONAL,
           nonCriticalExtensions
                                         SEQUENCE { } OPTIONAL
       } OPTIONAL
}
__ ****************
-- MBMS ACCESS INFORMATION
__ ***************
MBMSAccessInformation ::= SEQUENCE {
   -- Access Information IEs
       mbms-ServiceAccessInfoList MBMS-ServiceAccessInfoList-r6,
   -- Non critical extensions
       nonCriticalExtensions
                                     SEQUENCE {}
                                                    OPTIONAL
}
__ ***************
-- MBMS COMMON PTM RB INFORMATION
__ ***************
MBMSCommonPTMRBInformation ::= SEQUENCE {
   -- Common PTM RB Information IEs
       mbms-CommonRBInformationListMBMS-CommonRBInformationList-r6,mbms-TranspChInfoForEachTrChMBMS-TranspChInfoForEachTrCh-r6,mbms-TranspChInfoForEachCCTrChMBMS-TranspChInfoForEachCCTrCh-r6OPTIONAL,
    -- For FDD and TDD 3.84Mcps in a cell operating in MBSFN only mode and for TDD 7.68Mcps the
   -- IE mbms-PhyChInformationList shall be ignored.
       mbms-PhyChInformationList
                                    MBMS-PhyChInformationList-r6,
    -- Non critical extensions
       v770NonCriticalExtensions SEQUENCE {
           mbmsCommonPTMRBInformation-v770ext
           MBMSCommonPTMRBInformation-v770ext-IEs,
v780NonCriticalExtensions SEQUENCE {
              mbmsCommonPTMRBInformation-v780ext
                                             MBMSCommonPTMRBInformation-v780ext-IEs,
               nonCriticalExtensions
                                              SEQUENCE {} OPTIONAL
                OPTIONAL
               OPTIONAL
}
MBMSCommonPTMRBInformation-v770ext-IEs ::= SEQUENCE {
       mbms-PhyChInformationList-r7 MBMS-PhyChInformationList-r7 OPTIONAL
}
MBMSCommonPTMRBInformation-v780ext-IEs ::= SEQUENCE {
       mbsfn-TDDInformation-LCR MBSFN-TDDInformation-LCR
                                                                       OPTIONAL
}
__ *****************
-- MBMS CURRENT CELL PTM RB INFORMATION
__ ****************
MBMSCurrentCellPTMRBInformation ::= SEQUENCE {
   -- Current Cell PTM RB Information IEs
       mbms-CurrentCell-SCCPCHList MBMS-CurrentCell-SCCPCHList-r6 mbms-SIBType5-SCCPCHList MBMS-SIBType5-SCCPCHList-r6
                                                                       OPTIONAL.
                                                                       OPTIONAL.
   -- Non critical extensions
       Non critical extensions
v770NonCriticalExtensions
SEQUENCE {
          mbmsCurrentCellPTMRBInfo-v770ext
                                          MBMSCurrentCellPTMRBInfo-v770ext-IEs,
          nonCriticalExtensions
                                          SEQUENCE {}
                                                      OPTIONAL
          OPTIONAL
}
MBMSCurrentCellPTMRBInfo-v770ext-IEs ::= SEQUENCE {
       mbsfn-TDM-Info-List
                                     MBSFN-TDM-Info-List
                                                                       OPTIONAL
}
```

```
__ ***************
-- MBMS GENERAL INFORMATION
__ ******************
MBMSGeneralInformation ::= SEQUENCE {
    -- MBMS General Information IEs
        mbms-PreferredFrequencyInfo MBMS-PreferredFrequencyList-r6 OPTIONAL,
mbms-TimersAndCounters MBMS-TimersAndCounters-r6,
michConfigurationInfo MBMS-MICHConfigurationInfo-r6,
cellGroupIdentity MBMS-CellGroupIdentity-r6,
mschDefaultConfigurationInfo MBMS-MSCH-ConfigurationInfo-r6 OPTIONAL,
Non-gritigal extensions
    -- Non critical extensions v6b0NonCriticalExtensions SEQUENCE {
             mbmsGeneralInformation-v6b0ext MBMSGeneralInformation-v6b0ext-IEs, v770NonCriticalExtensions SEQUENCE {
                  \verb|mbmsGeneralInformation-v770ext| & \verb|MBMSGeneralInformation-v770ext-IEs|, \\
                  OPTIONAL
         }
                   OPTIONAL
}
MBMSGeneralInformation-v6b0ext-IEs ::= SEQUENCE {
         indicateChangeInSelectedServices BOOLEAN
MBMSGeneralInformation-v770ext-IEs ::= SEQUENCE {
         mbmsMICHConfiguration
                                             MBMS-MICHConfigurationInfo-v770ext
                                                                                            OPTIONAL,
         {\tt mbsfnInterFrequencyNeighbourList}
                                              MBSFN-InterFrequencyNeighbourList-r7
                                                                                              OPTIONAL
}
__ ******************
-- MBMS MODIFICATION REQUEST
__ ***************
MBMSModificationRequest ::= SEQUENCE {
    -- MBMS Modification Request IEs

mbms-PreferredFreqRequest MBMS-ServiceIdentity-r6

rb-InformationReleaseList RB-InformationReleaseList

-- Non critical extensions

v6b0NonCriticalExtensions SEQUENCE {
                                                                                        OPTIONAL.
                                                                                       OPTIONAL,
              mbmsModificationRequest-v6b0ext MBMSModificationRequest-v6b0ext-IEs,
              v6f0NonCriticalExtensions SEQUENCE {
                   mbmsModificationRequest-v6f0ext MBMSModificationRequest-v6f0ext-IEs,
                  OPTIONAL
         }
                  OPTIONAL
}
MBMSModificationRequest-v6b0ext-IEs ::= SEQUENCE {
         mbmsSelectedServiceInfo MBMS-SelectedServiceInfo
}
MBMSModificationRequest-v6f0ext-IEs ::= SEQUENCE {
         mbmsSupportOfServiceChangeForAPtpRB ENUMERATED { true }
                                                                              OPTIONAL
}
__ ***************************
-- MBMS MODIFIED SERVICES INFORMATION
__ ***************
MBMSModifiedServicesInformation ::= SEQUENCE {
    -- MBMS Modified Services Information \ensuremath{\mathsf{IEs}}
                                              MBMS-ModifedServiceList-r6 OPTIONAL,
         modifedServiceList
        mbms-ReacquireMCCH ENUMERATED { true } OPTIONAL, mbms-DynamicPersistenceLevel DynamicPersistenceLevel OPTIONAL, endOfModifiedMCCHInformation INTEGER (1..16) OPTIONAL, mbmsNumberOfNeighbourCells MBMS-NumberOfNeighbourCells-r6, mbms-AllUnmodifiedPTMServices ENUMERATED { true } OPTIONAL, mbms-PTMActivationTime MBMS-PTMActivationTime-r6 OPTIONAL,
                                             ENUMERATED { true }
    -- Non critical extensions
         v770NonCriticalExtensions
                                             SEQUENCE {
```

```
mbmsModifiedServicesInformation-v770ext
                                       MBMSModifiedServicesInformation-v770ext-IEs,
          v7c0NonCriticalExtensions SEQUENCE {
              {\tt mbmsModifiedServicesInformation-v7c0ext}
                                          MBMSModifiedServicesInformation-v7c0ext-IEs,
              nonCriticalExtensions
                                          SEQUENCE {}
                                                        OPTIONAL
                 OPTIONAL
              OPTIONAL
}
MBMSModifiedServicesInformation-v770ext-IEs ::= SEQUENCE {
       modifiedServiceList
                                   MBMS-ModifiedServiceList-v770ext
                                                                 OPTIONAL,
      mib-ValueTag
                                   MIB-ValueTag
                                                                   OPTIONAL.
}
MBMSModifiedServicesInformation-v7c0ext-IEs ::= SEQUENCE {
       modifiedServiceList
                                  MBMS-ModifiedServiceList-LCR-v7c0ext OPTIONAL
}
__ **************
-- MBMS NEIGHBOURING CELL PTM RB INFORMATION
__ ****************
MBMSNeighbouringCellPTMRBInformation ::= SEQUENCE {
   -- MBMS Neighbouring Cell PTM RB Information IEs
      neighbouringCellIdentity IntraFreqCellID, neighbouringCellSCCPCHList MBMS-NeighbouringCellSCCPCHList-r6,
      v770NonCriticalExtensions
   -- Non critical extensions
                                  SEQUENCE {
          mbmsNeighbouringCellPTMRBInformation-v770ext
                                       MBMSNeighbouringCellPTMRBInformation-v770ext-IEs,
          nonCriticalExtensions
                                       SEQUENCE {}
                                                    OPTIONAL
       }
             OPTIONAL
}
MBMSNeighbouringCellPTMRBInformation-v770ext-IEs ::= SEQUENCE {
   -- The "choice_PhyCH" in the tabular is realized by using the following IE due to the
   -- constraint in the ASN.1 implementation.
      neighbouringCellSCCPCHList
                                 MBMS-NeighbouringCellSCCPCHList-v770ext
}
__ ****************
-- MBMS SCHEDULING INFORMATION
__ ***************
MBMSSchedulingInformation ::= SEQUENCE {
   -- MBMS Scheduling Information IEs
      serviceSchedulingInfoList MBMS-ServiceSchedulingInfoList-r6,
   -- Non critical extensions
      nonCriticalExtensions
                                  SEQUENCE {}
                                                OPTIONAL
}
__ ***************
-- MBMS UNMODIFIED SERVICES INFORMATION
__ ****************
MBMSUnmodifiedServicesInformation ::= SEQUENCE {
   -- MBMS Unmodified Services Information IEs
      unmodifiedServiceList
                                  MBMS-UnmodifiedServiceList-r6
                                                                 OPTIONAL,
   -- Non critical extensions
      mbmsUnmodifiedServicesInformation-v770ext
                                       MBMSUnmodifiedServicesInformation-v770ext-IEs,
                                       SEQUENCE {}
          nonCriticalExtensions
                                                    OPTIONAL
           OPTIONAL
}
MBMSUnmodifiedServicesInformation-v770ext-IEs ::= SEQUENCE {
      unmodifiedServiceList
                                 MBMS-UnmodifiedServiceList-v770ext OPTIONAL
}
```

END

## 11.3 Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=
__ ****************
      CORE NETWORK INFORMATION ELEMENTS (10.3.1)
__ ****************
BEGIN
IMPORTS
   hiPDSCHidentities,
   hiPUSCHidentities,
   hiRM,
   maxAC
   maxAdditionalMeas,
   maxASC,
   maxASCmap,
   maxASCpersist,
   maxCCTrCH,
   maxCellMeas,
   maxCellMeas-1,
   maxCNdomains.
   maxCommonHRNTI,
   maxCommonQueueID,
   maxCPCHsets,
   maxDPCH-DLchan,
   maxDPDCH-UL,
   maxDRACclasses,
   maxE-DCHMACdFlow,
   maxE-DCHMACdFlow-1,
   maxFACHPCH,
   maxFreq,
   maxFreqBandsFDD,
   maxFreqBandsFDD-ext,
   maxFreqBandsTDD,
   maxFreqBandsGSM,
   maxGANSS,
   maxGANSS-1,
   maxGANSSSat,
   maxGANSSSat-1
   maxGERAN-SI,
   maxHProcesses,
   maxHSDSCHTBIndex,
   maxHSDSCHTBIndex-tdd384,
   maxHSSCCHs,
   maxHS-SCCHLessTrBlk,
   maxInterSysMessages,
   maxLoCHperRLC,
   maxMAC-d-PDUsizes,
   maxMBMS-CommonCCTrCh,
   maxMBMS-CommonPhyCh,
   maxMBMS-CommonRB,
   maxMBMS-CommonTrCh,
   maxMBMS-Freq,
   maxMBMS-L1CP,
   maxMBMSservCount,
   maxMBMSservModif,
   maxMBMSservSched,
   maxMBMSservSelect,
   maxMBMSservUnmodif,
   maxMBMSTransmis,
   maxMBSFNClusters,
   maxMeasEvent,
   maxMeasIntervals,
   maxMeasParEvent,
   maxNumCDMA2000Freqs,
   maxNumE-AGCH,
   maxNumE-HICH,
   maxNumFDDFreqs,
   maxNumGSMFreqRanges,
   maxGSMTargetCells,
   maxNumTDDFreqs,
```

}

}

```
maxOtherRAT,
   maxOtherRAT-16,
   maxPage1,
   maxPCPCH-APsig,
   maxPCPCH-APsubCh,
   maxPCPCH-CDsig,
   maxPCPCH-CDsubCh,
   maxPCPCH-SF,
   maxPCPCHs,
   maxPDCPAlgoType,
   maxPDSCH,
   maxPDSCH-TFCIgroups,
   maxPRACH,
   maxPRACH-FPACH,
   maxPredefConfig,
   maxPUSCH,
   maxOueueIDs,
   maxRABsetup,
   maxRAT,
   maxRB,
   maxRBallRABs,
    maxRBperTrCh,
    maxRBMuxOptions,
   maxRBperRAB,
   maxReportedGSMCells,
   maxRLCPDUsizePerLogChan,
    maxSRBsetup,
    maxRL,
   maxRL-1
    maxEDCHRL,
    maxROHC-PacketSizes-r4,
    maxROHC-Profile-r4,
   maxSat,
   maxSatClockModels,
    maxSCCPCH,
   maxSgnType,
   maxSIB,
   maxSIB-FACH,
   maxSystemCapability,
    maxTDD128Carrier,
   maxTF.
   maxTF-CPCH,
    maxTFC,
   maxTFCsub,
   maxTFCI-2-Combs,
   maxTGPS.
   maxTrCH.
   maxTrCHpreconf,
   maxTS,
   maxTS-1,
   maxTS-2.
   maxTS-LCR,
   maxTS-LCR-1,
   maxURA,
   maxURNTI-Group
FROM Constant-definitions;
Ansi-41-IDNNS ::=
                                            BIT STRING (SIZE (14))
CN-DomainIdentity ::=
                                   ENUMERATED {
                                        cs-domain,
                                        ps-domain }
{\tt CN-DomainInformation} \ ::= \\
                                    SEQUENCE {
                                         CN-DomainIdentity,
    cn-DomainIdentity
    cn-DomainSpecificNAS-Info
                                        NAS-SystemInformationGSM-MAP
CN-DomainInformationFull ::=
                                    SEQUENCE {
   cn-DomainIdentity
                                     CN-DomainIdentity,
                                        NAS-SystemInformationGSM-MAP,
    cn-DomainSpecificNAS-Info
    cn-DRX-CycleLengthCoeff
                                        CN-DRX-CycleLengthCoefficient
CN-DomainInformationList ::=
                                    SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CN-DomainInformation
CN-DomainInformationListFull ::=
                                    SEQUENCE (SIZE (1..maxCNdomains)) OF
                                         CN-DomainInformationFull
```

```
CN-DomainSysInfo ::=
                                    SEQUENCE {
   cn-DomainIdentity
                                       CN-DomainIdentity,
                                        CHOICE {
    cn-Type
       gsm-MAP
                                            NAS-SystemInformationGSM-MAP,
       ansi-41
                                            NAS-SystemInformationANSI-41
    cn-DRX-CycleLengthCoeff
                                       CN-DRX-CycleLengthCoefficient
}
CN-DomainSysInfoList ::=
                                    SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CN-DomainSysInfo
CN-InformationInfo ::=
                                    SEQUENCE {
   plmn-Identity
                                        PLMN-Identity
                                                                            OPTIONAL,
                                        NAS-SystemInformationGSM-MAP
    cn-CommonGSM-MAP-NAS-SysInfo
                                                                            OPTIONAL,
    cn-DomainInformationList
                                        CN-DomainInformationList
                                                                            OPTIONAL
}
CN-InformationInfo-r6 ::=
                                    SEQUENCE {
                                    PLMN-Identity
   plmn-Identity
                                                                           OPTIONAL,
    cn-CommonGSM-MAP-NAS-SysInfo
                                        NAS-SystemInformationGSM-MAP
                                                                           OPTIONAL,
    cn-DomainInformationList
                                        CN-DomainInformationList
                                                                            OPTIONAL,
   primary-plmn-Identity
                                       PLMN-Identity
                                                                            OPTIONAL
}
CN-InformationInfoFull ::=
                                   SEQUENCE {
                                   PLMN-Identity
NAS-SystemInformationGSM-MAP
   plmn-Identity
                                                                            OPTIONAL,
                                      NAS-SystemInformationGSM-MAP
CN-DomainInformationListFull
   cn-CommonGSM-MAP-NAS-SysInfo
                                                                          OPTIONAL,
    cn-DomainInformationListFull
                                                                          OPTIONAL
Digit ::=
                                    INTEGER (0..9)
                                            SEQUENCE {
Gsm-map-IDNNS ::=
    routingbasis
                                                    CHOICE {
       localPTMSI
                                                        SEQUENCE {
           routingparameter
                                                           RoutingParameter
        {\tt tMSIofsamePLMN}
                                                        SEQUENCE {
           routingparameter
                                                            RoutingParameter
                                                        SEQUENCE {
        tMSIofdifferentPLMN
           routingparameter
                                                            RoutingParameter
        iMSIresponsetopaging
                                                        SEQUENCE {
           routingparameter
                                                            RoutingParameter
        iMSIcauseUEinitiatedEvent
                                                        SEQUENCE {
           routingparameter
                                                            RoutingParameter
                                                        SEQUENCE {
        i MET
           routingparameter
                                                           RoutingParameter
                                                        SEQUENCE {
        spare2
                                                            RoutingParameter
           routingparameter
                                                        SEQUENCE {
        spare1
           routingparameter
                                                            RoutingParameter
    -- dummy is not used in this version of the specification and
    -- it should be ignored by the receiver.
                                            BOOLEAN
    dummy
}
IMEI ::=
                                    SEQUENCE (SIZE (15)) OF
                                        IMEI-Digit
IMEI-Digit ::=
                                    INTEGER (0..15)
                                    SEQUENCE (SIZE (6..21)) OF
IMSI-GSM-MAP ::=
                                       Digit
IntraDomainNasNodeSelector ::=
                                                SEQUENCE {
                                                    CHOICE {
    version
       release99
                                                        SEQUENCE {
           cn-Type
                                                            CHOICE {
```

```
gsm-Map-IDNNS
                                                                Gsm-map-IDNNS,
                ansi-41-IDNNS
                                                                Ansi-41-IDNNS
           }
        later
                                                        SEQUENCE {
          futurecoding
                                                           BIT STRING (SIZE (15))
}
                                    SEQUENCE {
LAI ::=
   plmn-Identity
                                        PLMN-Identity,
                                        BIT STRING (SIZE (16))
    lac
                                    SEQUENCE (SIZE (3)) OF
MCC ::=
                                        Digit
MNC ::=
                                    SEQUENCE (SIZE (2..3)) OF
                                       Digit
MultiplePLMN-List-r6 ::=
                                    SEQUENCE {
   mibPLMN-Identity
                                        BOOLEAN,
                                        SEQUENCE (SIZE (1..5)) OF
   multiplePLMNs
                                            PLMN-IdentityWithOptionalMCC-r6
}
                                   OCTET STRING (SIZE (1..4095))
NAS-Message ::=
NAS-Synchronisation-Indicator ::= BIT STRING(SIZE(4))
NAS-SystemInformationGSM-MAP ::=
                                   OCTET STRING (SIZE (1..8))
P-TMSI-GSM-MAP ::=
                                    BIT STRING (SIZE (32))
PagingRecordTypeID ::=
                                    ENUMERATED {
                                       imsi-GSM-MAP,
                                        tmsi-GSM-MAP-P-TMSI,
                                        imsi-DS-41,
                                       tmsi-DS-41 }
PLMN-Identity ::=
                                    SEQUENCE {
                                        MCC,
   mcc
   mnc
                                        MNC
}
PLMN-IdentityWithOptionalMCC-r6 ::= SEQUENCE {
                                                                OPTIONAL,
   mnc
                                        MNC
}
                                    CHOICE {
PLMN-Type ::=
   gsm-MAP
                                       SEQUENCE {
       plmn-Identity
                                           PLMN-Identity
    },
    ansi-41
                                    SEQUENCE {
       p-REV
                                       P-REV,
       min-P-REV
                                       Min-P-REV,
       sid
                                       SID,
       nid
                                       NTD
    gsm-MAP-and-ANSI-41
                                    SEQUENCE {
      plmn-Identity
                                     PLMN-Identity,
       p-REV
                                        P-REV,
       min-P-REV
                                       Min-P-REV,
       sid
                                       SID,
                                        NID
       nid
    },
                                    NULL
    spare
}
RAB-Identity ::=
                                    CHOICE {
   gsm-MAP-RAB-Identity
                                      BIT STRING (SIZE (8)),
   ansi-41-RAB-Identity
                                       BIT STRING (SIZE (8))
}
RAI ::=
                                    SEQUENCE {
   lai
                                        LAI,
```

```
RoutingAreaCode
  rac
}
RoutingAreaCode ::=
                                  BIT STRING (SIZE (8))
RoutingParameter ::=
                                              BIT STRING (SIZE (10))
                                  BIT STRING (SIZE (32))
TMSI-GSM-MAP ::=
__ ***************
      UTRAN MOBILITY INFORMATION ELEMENTS (10.3.2)
__ ***************
                                   ENUMERATED {
AccessClassBarred ::=
                                       barred, notBarred }
AccessClassBarredList ::=
                                   SEQUENCE (SIZE (maxAC)) OF
                                       AccessClassBarred
                                   ENUMERATED {
AllowedIndicator ::=
                                     allowed, notAllowed }
CellAccessRestriction ::=
                                   SEOUENCE {
                                   CellBarred,
   cellBarred
   cellReservedForOperatorUse ReservedIndicator, cellReservationExtension ReservedIndicator,
   -- NOTE: IE accessClassBarredList should not be included if the IE CellAccessRestriction
    -- is included in the IE SysInfoType4
   accessClassBarredList
                                       AccessClassBarredList
                                                                          OPTIONAL
}
CellBarred ::=
                                  CHOICE {
                                     SEQUENCE {
   barred
                                       AllowedIndicator,
       intraFreqCellReselectionInd
       t-Barred
                                          T-Barred
                                       NULL
   notBarred
}
                                  BIT STRING (SIZE (28))
CellIdentity ::=
CellIdentity-PerRL-List ::=
                                  SEQUENCE (SIZE (1..maxRL)) OF CellIdentity
CellSelectReselectInfoSIB-3-4 ::= SEQUENCE {
   MappingInfo cellSelectQualityMeasure CHOICE { cpich-Ec-N0
                                                                          OPTIONAL.
   mappingInfo
                                          SEQUENCE {
           -- Default value for q-HYST-2-S is q-HYST-1-S
                                                                          OPTIONAL
           q-HYST-2-S
                                               Q-Hyst-S
       cpich-RSCP
                                           NULL
    }.
    modeSpecificInfo
                                       CHOICE {
        fdd
                                           SEQUENCE {
                                            S-SearchQual
S-SearchQual
                                                                       OPTIONAL,
           s-Intrasearch
           s-Intersearch
                                                                          OPTIONAL,
                                               S-SearchRXLEV
           s-SearchHCS
                                               RAT-FDD-InfoList
           rat-List
           q-QualMin
                                               Q-QualMin,
           q-RxlevMin
                                               Q-RxlevMin
        },
        tdd
                                           SEQUENCE {
                                              S-SearchRXLEV
S-SearchRXLEV
S-SearchRXLEV
RAT-TDD-InfoList
                                                                    OPTIONAL,
                                            S-SearchRXLEV
           s-Intrasearch
           s-Intersearch
                                                                         OPTIONAL,
           s-SearchHCS
           rat-List
           q-RxlevMin
                                               Q-RxlevMin
        }
    q-Hyst-1-S
                                       O-Hvst-S,
   T-Reselection-S,
hcs-ServingCellInformation HCS-ServingCellInformation OPTIONAL,
maxAllowedUL-TX-Power MaxAllowedUL-TX-Power
}
DomainSpecificAccessRestrictionForSharedNetwork-v670ext ::= CHOICE {
```

```
domainSpecificAccessRestictionList
                                                              DomainSpecificAccessRestrictionList-
v670ext,
        domainSpecificAccessRestictionParametersForAll
                                                            DomainSpecificAccessRestrictionParam-
v670ext
DomainSpecificAccessRestrictionList-v670ext ::= SEQUENCE {
        {\tt domainSpecificAccessRestrictionParametersForOperator1}
                                     DomainSpecificAccessRestrictionParam-v670ext
                                                                                       OPTIONAL,
        {\tt domainSpecificAccessRestrictionParametersForOperator2}
                                     DomainSpecificAccessRestrictionParam-v670ext
                                                                                       OPTIONAL,
        {\tt domainSpecificAccessRestrictionParametersForOperator3}
                                     DomainSpecificAccessRestrictionParam-v670ext
                                                                                       OPTIONAL,
        domainSpecificAccessRestrictionParametersForOperator4
                                     DomainSpecificAccessRestrictionParam-v670ext
                                                                                       OPTIONAL,
        {\tt domainSpecificAccessRestrictionParametersForOperator5}
                                     DomainSpecificAccessRestrictionParam-v670ext
                                                                                       OPTIONAL
}
DomainSpecificAccessRestrictionParam-v670ext ::= SEQUENCE {
        cSDomainSpecificAccessRestriction DomainSpecificAccessRestriction-v670ext, pSDomainSpecificAccessRestriction DomainSpecificAccessRestriction-v670ext
}
DomainSpecificAccessRestriction-v670ext ::= CHOICE {
        noRestriction NULL,
        restriction
                            SEQUENCE {
            domainSpecficAccessClassBarredList AccessClassBarredList OPTIONAL
}
MapParameter ::=
                                     INTEGER (0..127)
Mapping ::=
                                     SEQUENCE {
                                         RAT,
    rat
    mappingFunctionParameterList
                                         MappingFunctionParameterList
}
                                     SEQUENCE {
Mapping-LCR-r4 ::=
   mappingFunctionParameterList
                                       MappingFunctionParameterList
                                    SEQUENCE {
MappingFunctionParameter ::=
    {\tt functionType}
                                         MappingFunctionType,
    mapParameter1
                                         MapParameter
                                                                               OPTIONAL,
    mapParameter2
                                         MapParameter,
    -- The presence of upperLimit is conditional on the number of repetition
    upperLimit
                                         UpperLimit
                                                                               OPTIONAL
                                     SEQUENCE (SIZE (1..maxMeasIntervals)) OF
MappingFunctionParameterList ::=
                                         MappingFunctionParameter
                                     ENUMERATED {
MappingFunctionType ::=
                                         linear,
                                         functionType2,
                                         functionType3,
                                         functionType4 }
-- In MappingInfo list, mapping for FDD and 3.84Mcps TDD is defined.
-- For 1.28Mcps TDD, Mapping-LCR-r4 is used instead.
MappingInfo ::=
                                     SEQUENCE (SIZE (1..maxRAT)) OF
                                         Mapping
-- Actual value Q-Hyst-S = IE value * 2
                                     INTEGER (0..20)
O-Hyst-S ::=
Q-Hyst-S-Fine ::= INTEGER (0..40)
RAT ::=
                                     ENUMERATED {
                                         utra-FDD,
                                         utra-TDD,
                                         qsm,
                                         cdma2000 }
RAT-FDD-Info ::=
                                     SEQUENCE {
   rat-Identifier
                                         RAT-Identifier,
    s-SearchRAT
                                         S-SearchQual,
```

```
s-HCS-RAT
                                     S-SearchRXLEV
                                                                            OPTIONAL,
   s-Limit-SearchRAT
                                     S-SearchQual
}
RAT-FDD-InfoList ::=
                                  SEQUENCE (SIZE (1..maxOtherRAT)) OF
                                     RAT-FDD-Info
RAT-Identifier ::=
                                  ENUMERATED {
                                     gsm, cdma2000 }
                                  SEQUENCE {
RAT-TDD-Info ::=
   rat-Identifier
                                     RAT-Identifier,
   s-SearchRAT
                                     S-SearchRXLEV.
   s-HCS-RAT
                                     S-SearchRXLEV
                                                                       OPTIONAL,
   s-Limit-SearchRAT
                                     S-SearchRXLEV
}
                                 SEQUENCE (SIZE (1..maxOtherRAT)) OF
RAT-TDD-InfoList ::=
                                     RAT-TDD-Info
                                  ENUMERATED {
ReservedIndicator ::=
                                     reserved,
                                     notReserved }
-- Actual value S-SearchQual = IE value * 2
S-SearchQual ::=
                                     INTEGER (-16..10)
-- Actual value S-SearchRXLEV = (IE value * 2) + 1
S-SearchRXLEV ::=
                                     INTEGER (-53..45)
-- Actual value ScalingFactor = IE value * 0.1
SpeedDependentScalingFactor ::=
                                INTEGER (0..10)
                                  ENUMERATED {
T-Barred ::=
                                      s10, s20, s40, s80,
                                      s160, s320, s640, s1280 }
                                  INTEGER (0..31)
T-Reselection-S ::=
-- Actual value T-Reselection-S-Fine = IE value * 0.2
T-Reselection-S-Fine ::=
                                 INTEGER (0..31)
-- Actual value ScalingFactor = IE value * 0.25
TreselectionScalingFactor ::=
                                 INTEGER (4..19)
 -- For UpperLimit, the used range depends on the RAT used.
                                  INTEGER (1..91)
UpperLimit ::=
URA-Identity ::=
                                 BIT STRING (SIZE (16))
                                 SEQUENCE (SIZE (1..maxURA)) OF
URA-IdentitvList ::=
                                     URA-Identity
__ ****************
      USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)
__ ***************
AccessStratumReleaseIndicator ::= ENUMERATED {
                                      rel-4, rel-5, rel-6, rel-7,
                                      spare12, spare11, spare10, spare9, spare8,
                                      spare7, spare6, spare5, spare4, spare3,
                                     spare2, spare1 }
-- TABULAR : for ActivationTime, value 'now' always appear as default, and is encoded
-- by absence of the field
                                 INTEGER (0..255)
ActivationTime ::=
BackoffControlParams ::=
                                SEQUENCE {
   n-AP-RetransMax
                                    N-AP-RetransMax,
   n-AccessFails
                                     N-AccessFails,
   nf-BO-NoAICH
                                     NF-BO-NoAICH,
   ns-BO-Busy
                                     NS-BO-Busy,
                                     NF-BO-AllBusy,
   nf-BO-AllBusy
   nf-BO-Mismatch
                                     NF-BO-Mismatch,
   t-CPCH
                                     T-CPCH
```

```
C-RNTI ::=
                                     BIT STRING (SIZE (16))
CapabilityUpdateRequirement ::=
                                    SEOUENCE {
    ue-RadioCapabilityFDDUpdateRequirement BOOLEAN,
    -- ue-RadioCapabilityTDDUpdateRequirement is for 3.84Mcps TDD update requirement
    ue-RadioCapabilityTDDUpdateRequirement BOOLEAN,
                                         SystemSpecificCapUpdateReqList
                                                                             OPTIONAL
    systemSpecificCapUpdateReqList
}
CapabilityUpdateRequirement-r4-ext ::= SEQUENCE {
    ue-RadioCapabilityUpdateRequirement-TDD128 BOOLEAN
CapabilityUpdateRequirement-r4 ::= SEQUENCE {
    ue-RadioCapabilityFDDUpdateRequirement-FDD BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD384 BOOLEAN, ne-RadioCapabilityTDDUpdateRequirement-TDD128 BOOLEAN,
    systemSpecificCapUpdateReqList
                                       SystemSpecificCapUpdateReqList
CapabilityUpdateRequirement-r5 ::= SEQUENCE {
    \verb"ue-RadioCapabilityFDDUpdateRequirement-FDD"
                                                      BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD384 BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD128
                                                     BOOLEAN.
                                        SystemSpecificCapUpdateReqList-r5
    systemSpecificCapUpdateReqList
                                                                                  OPTIONAL
CapabilityUpdateRequirement-v770ext ::= SEQUENCE {
    ue-RadioCapabilityTDDUpdateRequirement-TDD768
                                                      BOOLEAN
CapabilityUpdateRequirement-r7 ::= SEQUENCE {
    ue-RadioCapabilityFDDUpdateRequirement-FDD
                                                     BOOLEAN.
    ue-RadioCapabilityTDDUpdateRequirement-TDD384 BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD768 BOOLEAN, ue-RadioCapabilityTDDUpdateRequirement-TDD128 BOOLEAN,
    systemSpecificCapUpdateReqList
                                        SystemSpecificCapUpdateReqList-r5
                                                                                 OPTIONAL
-- If the IE CellUpdateCause has the value 'cellUpdateCause-ext', the actual value is
-- defined in the IE CellUpdateCause-ext.
                                     ENUMERATED {
CellUpdateCause ::=
                                         cellReselection,
                                         periodicalCellUpdate,
                                          uplinkDataTransmission,
                                         utran-pagingResponse,
                                         re-enteredServiceArea,
                                          radiolinkFailure,
                                         rlc-unrecoverableError,
                                         cellUpdateCause-ext }
-- The IE CellUpdateCause-ext shall be present, if the IE CellUpdateCause has the
-- value 'cellUpdateCause-ext'.
-- dummy is not used in this version of the specification, it should not be sent
-- and if received it should be ignored by the receiver.
CellUpdateCause-ext ::=
                                     ENUMERATED {
                                         mbms-Reception,
                                         mbms-PTP-RB-Request,
                                         dummy,
                                          spare1 }
ChipRateCapability ::=
                                     ENUMERATED {
                                         mcps3-84, mcps1-28 }
CipheringAlgorithm ::=
                                     ENUMERATED {
                                         uea0, uea1 }
CipheringAlgorithm-r7 ::=
                                     ENUMERATED {
                                         uea0, uea1, uea2 }
CipheringModeCommand ::=
                                     CHOICE {
                                         CipheringAlgorithm,
    startRestart
                                         NULL
    dummy
CipheringModeCommand-r7 ::=
                                    SEQUENCE {
```

```
startRestart
                                        CipheringAlgorithm-r7
}
                                    SEQUENCE {
CipheringModeInfo ::=
    -- TABULAR: The ciphering algorithm is included in the CipheringModeCommand.
    cipheringModeCommand CipheringModeCommand,
    activationTimeForDPCH ActivationTime OPTIONAL rb-DL-CiphActivationTimeInfo RB-ActivationTimeInfoList OPTIONAL
                                                                             OPTIONAL.
}
CipheringModeInfo-r7 ::=
                                    SEQUENCE {
    -- TABULAR: The ciphering algorithm is included in the CipheringModeCommand.
    cipheringModeCommand CipheringModeCommand-r7, activationTimeForDPCH ActivationTime
                                                                             OPTIONAL,
    rb-DL-CiphActivationTimeInfo
                                       RB-ActivationTimeInfoList
                                                                             OPTIONAL
}
CN-DRX-CycleLengthCoefficient ::= INTEGER (6..9)
IMSI-GSM-MAP,
    imsi-GSM-MAP
    tmsi-GSM-MAP
                                        TMSI-GSM-MAP
    p-TMSI-GSM-MAP
                                        P-TMSI-GSM-MAP,
    imsi-DS-41
                                        IMSI-DS-41,
    tmsi-DS-41
                                        TMST-DS-41.
    spare3
                                        NULL,
    spare2
                                        NULL,
    spare1
                                        NULL
}
{\tt CompressedModeMeasCapability ::= } {\tt SEQUENCE } \{
    fdd-Measurements
                                        BOOLEAN,
    \hbox{\tt -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements}\\
    -- are made optional since they are conditional based on another information element.
    -- Their absence corresponds to the case where the condition is not true.
    -- The IE 'tdd-Measurements' applies to either or both TDD 3.84 Mcps and TDD 7.68 Mcps,
    -- depending on the RF capability conditions.
    tdd-Measurements
                                        BOOLEAN
                                                                             OPTIONAL,
    qsm-Measurements
                                        GSM-Measurements
                                                                             OPTIONAL.
    multiCarrierMeasurements
                                       BOOLEAN
                                                                             OPTIONAL
}
CompressedModeMeasCapability-LCR-r4 ::= SEQUENCE {
    tdd128-Measurements
                                            BOOLEAN
                                                                             OPTIONAL
CompressedModeMeasCapabFDDList ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
                                        CompressedModeMeasCapabFDD
CompressedModeMeasCapabFDDList2 ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
                                        CompressedModeMeasCapabFDD2
CompressedModeMeasCapabFDDList-ext ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
                                            CompressedModeMeasCapabFDD-ext
{\tt CompressedModeMeasCapabFDD} ::= \\ {\tt SEQUENCE} \ \{
    radioFrequencyBandFDD RadioFrequencyBandFDD OPTIONAL, dl-MeasurementsFDD BOOLEAN,
    dl-MeasurementsFDD
                                        BOOLEAN,
    ul-MeasurementsFDD
                                        BOOLEAN
}
                                   SEQUENCE {
CompressedModeMeasCapabFDD2 ::=
   -- UE may omit both IEs if this IE indicates the compressed mode capability within the same
    -- frequency band. Otherwise, the UE shall include either one of the following OPTIONAL IEs.
                             RadioFrequencyBandFDD OPTIONAL,
    radioFrequencyBandFDD
    radioFrequencyBandFDD2
                                        RadioFrequencyBandFDD2 OPTIONAL,
    dl-MeasurementsFDD
                                        BOOLEAN,
    ul-MeasurementsFDD
                                        BOOLEAN
}
CompressedModeMeasCapabFDD-ext ::= SEQUENCE { radioFrequencyBandFDD2 RadioFrequentsFDD BOOLEAN,
                                        RadioFrequencyBandFDD2,
                                       BOOLEAN,
                                        BOOLEAN
    ul-MeasurementsFDD
}
CompressedModeMeasCapabTDDList ::= SEQUENCE (SIZE (1..maxFreqBandsTDD)) OF
                                        {\tt CompressedModeMeasCapabTDD}
```

```
CompressedModeMeasCapabTDD ::= SEQUENCE {
   radioFrequencyBandTDD RadioFrequencyBandTDD, dl-MeasurementsTDD BOOLEAN,
    ul-MeasurementsTDD
                                       BOOLEAN
}
CompressedModeMeasCapabGSMList ::= SEQUENCE (SIZE (1..maxFreqBandsGSM)) OF
                                       CompressedModeMeasCapabGSM
CompressedModeMeasCapabGSM ::= SEQUENCE {
    radioFrequencyBandGSM
                                       RadioFrequencyBandGSM,
    dl-MeasurementsGSM
                                       BOOLEAN.
    ul-MeasurementsGSM
                                       BOOLEAN
}
{\tt CompressedModeMeasCapabMC ::= } \\ {\tt SEQUENCE } \{
   dl-MeasurementsMC
                                       BOOLEAN.
   ul-MeasurementsMC
                                       BOOLEAN
}
                                   SEQUENCE {
CPCH-Parameters ::=
   initialPriorityDelayList
backoffControlParams
                                       InitialPriorityDelayList OPTIONAL,
                                       BackoffControlParams,
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    powerControlAlgorithm
                                       PowerControlAlgorithm,
    dl-DPCCH-BER
                                       DL-DPCCH-BER
}
DL-CapabilityWithSimultaneousHS-DSCHConfig ::= ENUMERATED{kbps32, kbps64, kbps128, kbps384}
DL-DPCCH-BER ::=
                                   INTEGER (0..63)
DL-PhysChCapabilityFDD ::= SEQUENCE {
    -- The IE "maxNoDPCH-PDSCH-Codes" only gives information on the maximum number of DPCH Codes.
   maxNoDPCH-PDSCH-Codes INTEGER (1..8),
maxNoPhysChBitsReceived,
MaxNoPhysChBitsReceived,
    supportForSF-512
                                       BOOLEAN,
    -- dummy and dummy2 are not used in this version of the specification
    -- and if received they should be ignored.
                                       BOOLEAN,
    dummy2
                                       SimultaneousSCCPCH-DPCH-Reception
}
DL-PhysChCapabilityFDD-v380ext ::=
                                           SEQUENCE {
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy
                                               SupportOfDedicatedPilotsForChEstimation OPTIONAL
SupportOfDedicatedPilotsForChEstimation ::=
                                                   ENUMERATED { true }
DL-PhysChCapabilityFDD-v770ext ::= SEQUENCE {
    hsdsch-physical-layer-category-ext HSDSCH-physical-layer-category-ext OPTIONAL,
   hsschlessHsdschOperation
                                           ENUMERATED { true
                                                                               OPTIONAL,
                                           ENUMERATED { true }
ENUMERATED { true }
    \verb"enhancedFdpch"
                                                                               OPTIONAL,
    hsdschReception-CellFach
                                                                               OPTIONAL,
    hsdschReception-CellUraPch
                                           ENUMERATED { true }
                                                                              OPTIONAL
}
maxTS-PerFrame
                                   MaxTS-PerFrame,
   maxPhysChPerFrame
                                       MaxPhysChPerFrame,
                                       MinimumSF-DL,
   minimumSF
    supportOfPDSCH
                                       BOOLEAN.
    maxPhysChPerTS
                                       MaxPhysChPerTS
{\tt DL-PhysChCapabilityTDD-LCR-r4} \ ::= \ \ {\tt SEQUENCE} \ \big\{
    maxTS-PerSubFrame
                                       MaxTS-PerSubFrame-r4,
    maxPhysChPerFrame
                                        MaxPhysChPerSubFrame-r4,
    minimumSF
                                       MinimumSF-DL,
    supportOfPDSCH
                                       BOOLEAN,
                                       MaxPhysChPerTS,
    maxPhysChPerTS
    supportOf8PSK
                                       BOOLEAN
DL-PhysChCapabilityTDD-128-v770ext ::= SEQUENCE {
```

```
multiCarrier-physical-layer-category MultiCarrier-HSDSCH-physical-layer-category OPTIONAL
}
                                       SEQUENCE {
DL-PhysChCapabilityTDD-768 ::=
   maxTS-PerFrame
                                            MaxTS-PerFrame,
    maxPhysChPerFrame
                                            MaxPhysChPerFrame-768,
                                            MinimumSF-DL-768,
   minimumSF
    supportOfPDSCH
                                            BOOLEAN,
    tdd768-hspdsch
                                            CHOICE {
       supported
                                                HSDSCH-physical-layer-category,
       unsupported
                                            MaxPhysChPerTS-768
    maxPhysChPerTS
}
DL-PhysChCapabilityInfoTDD-768 ::= SEQUENCE {
    maxTS-PerFrame
                                        MaxTS-PerFrame,
   maxPhysChPerFrame
                                        MaxPhysChPerFrame-768,
   minimumSF
                                        MinimumSF-DL-768,
    supportOfPDSCH
                                        BOOLEAN,
    {\tt maxPhysChPerTS}
                                        MaxPhysChPerTS-768
DL-TransChCapability ::=
                                  SEQUENCE {
                                    MaxNoBits,
   maxNoBitsReceived
   maxConvCodeBitsReceived
                                       MaxNoBits,
    turboDecodingSupport
                                       TurboSupport,
   maxSimultaneousTransChs
                                       MaxSimultaneousTransChsDL,
                                      MaxSimultaneousCCTrCH-Count,
   maxSimultaneousCCTrCH-Count
   maxReceivedTransportBlocks
                                       MaxTransportBlocksDL,
    maxNumberOfTFC
                                       MaxNumberOfTFC-DL,
   maxNumberOfTF
                                       MaxNumberOfTF
}
DRAC-SysInfo ::=
                                    SEQUENCE {
    transmissionProbability
                                       TransmissionProbability,
   maximumBitRate
                                       MaximumBitRate
}
                                    SEQUENCE (SIZE (1..maxDRACclasses)) OF
DRAC-SysInfoList ::=
                                        DRAC-SysInfo
DSCH-RNTI ::=
                                    BIT STRING (SIZE (16))
DelayRestrictionFlag ::=
                                    ENUMERATED { true }
                                    BIT STRING (SIZE (16))
E-RNTI ::=
ESN-DS-41 ::=
                                    BIT STRING (SIZE (32))
EstablishmentCause ::=
                                    ENUMERATED {
                                        originatingConversationalCall,
                                        originatingStreamingCall,
                                        originatingInteractiveCall,
                                        originatingBackgroundCall,
                                        originatingSubscribedTrafficCall,
                                        terminatingConversationalCall,
                                        terminatingStreamingCall,
                                        terminatingInteractiveCall,
                                        terminatingBackgroundCall,
                                        emergencyCall,
                                        interRAT-CellReselection,
                                        interRAT-CellChangeOrder,
                                        registration,
                                        detach,
                                        originatingHighPrioritySignalling,
                                        originatingLowPrioritySignalling,
                                        callRe-establishment,
                                        terminatingHighPrioritySignalling,
                                        terminatingLowPrioritySignalling,
                                        terminatingCauseUnknown,
                                        mbms-Reception,
                                        mbms-PTP-RB-Request,
                                        spare10,
                                        spare9,
                                        spare8,
                                        spare7,
                                        spare6,
```

```
spare5,
                                        spare4,
                                        spare3,
                                        spare2,
                                        spare1 }
FailureCauseWithProtErr ::=
                                    CHOICE {
    configurationUnsupported
                                        NULL,
    physicalChannelFailure
                                        NULL,
    {\tt incompatible Simultaneous Reconfiguration}
                                       TGPSI,
ProtocolErrorInformation,
    compressedModeRuntimeError
    protocolError
    cellUpdateOccurred
                                      NULL,
    invalidConfiguration
                                       NULL,
                                       NULL,
   configurationIncomplete
    unsupportedMeasurement
                                       NULL.
    mbmsSessionAlreadyReceivedCorrectly NULL,
    lowerPriorityMBMSService
                                       NULL,
    spare5
                                        NULL,
    spare4
                                        NULL,
    spare3
                                        NULL,
    spare2
                                        NULL,
    spare1
                                        NULL
}
FailureCauseWithProtErrTrId ::=
                                   SEQUENCE {
       rrc-TransactionIdentifier
                                       RRC-TransactionIdentifier,
       failureCause
                                        FailureCauseWithProtErr
}
GANSS-Mode ::=
                                    ENUMERATED {
                                        networkBased,
                                        uEBased,
                                        both,
                                        none }
                                            SEQUENCE {
GroupIdentityWithReleaseInformation ::=
                                                RRC-ConnectionReleaseInformation,
       rrc-ConnectionReleaseInformation
        groupReleaseInformation
                                                GroupReleaseInformation
                                  SEQUENCE {
GroupReleaseInformation ::=
                                        U-RNTI-Group
    uRNTI-Group
GSM-Measurements ::=
                                    SEQUENCE {
   gsm900
                                        BOOLEAN,
    dcs1800
                                        BOOLEAN.
                                        BOOLEAN
    gsm1900
}
H-RNTI ::=
                                    BIT STRING (SIZE (16))
High-MobilityDetected ::=
                                    ENUMERATED { high-MobilityDetected }
HSDSCH-physical-layer-category ::=
                                        INTEGER (1..64)
HSDSCH-physical-layer-category-ext ::= INTEGER (1..20)
MultiCarrier-HSDSCH-physical-layer-category ::= INTEGER (1..64)
UESpecificBehaviourInformation1idle ::= BIT STRING (SIZE (4))
UESpecificBehaviourInformation1interRAT ::= BIT STRING (SIZE (8))
IMSI-and-ESN-DS-41 ::=
                                    SEQUENCE {
                                        IMSI-DS-41,
    imsi-DS-41
    esn-DS-41
                                        ESN-DS-41
IMSI-DS-41 ::=
                                    OCTET STRING (SIZE (5..7))
InitialPriorityDelayList ::=
                                    SEQUENCE (SIZE (1..maxASC)) OF
                                        NS-IP
                                    CHOICE {
InitialUE-Identity ::=
```

```
imsi
                                        IMSI-GSM-MAP,
    tmsi-and-LAI
                                        TMSI-and-LAI-GSM-MAP
   p-TMSI-and-RAI
                                        P-TMSI-and-RAI-GSM-MAP,
    imei
                                        IMEI,
    esn-DS-41
                                        ESN-DS-41,
    imsi-DS-41
                                        IMSI-DS-41,
    imsi-and-ESN-DS-41
                                        IMSI-and-ESN-DS-41,
    tmsi-DS-41
                                        TMSI-DS-41
}
IntegrityCheckInfo ::=
                                    SEQUENCE {
    messageAuthenticationCode
                                        MessageAuthenticationCode,
    rrc-MessageSequenceNumber
                                        RRC-MessageSequenceNumber
}
                                    SEQUENCE {
IntegritvProtActivationInfo ::=
                                        RRC-MessageSequenceNumberList
    rrc-MessageSequenceNumberList
IntegrityProtectionAlgorithm ::=
                                    ENUMERATED {
                                        uia1 }
IntegrityProtectionAlgorithm-r7 ::= ENUMERATED {
                                        uia1, uia2 }
IntegrityProtectionModeCommand ::= CHOICE {
    startIntegrityProtection
                                        SEQUENCE {
       integrityProtInitNumber
                                           IntegrityProtInitNumber
                                        SEQUENCE {
    modify
       dl-IntegrityProtActivationInfo
                                            IntegrityProtActivationInfo
}
IntegrityProtectionModeInfo ::=
                                    SEQUENCE {
     - TABULAR: DL integrity protection activation info and Integrity
    -- protection intialisation number have been nested inside
    -- IntegrityProtectionModeCommand.
                                        IntegrityProtectionModeCommand,
    integrityProtectionModeCommand
                                    IntegrityProtectionAlgorithm
    integrityProtectionAlgorithm
                                                                             OPTIONAL
IntegrityProtectionModeInfo-r7 ::= SEQUENCE {
     -- TABULAR: DL integrity protection activation info and Integrity
    -- protection intialisation number have been nested inside
    -- IntegrityProtectionModeCommand.
    -- IntegrityProtectionModeCommand IntegrityProtectionAlgorithm IntegrityProtectionAlgorithm-r7
                                                                             OPTIONAL
                                    BIT STRING (SIZE (32))
IntegrityProtInitNumber ::=
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
MaxHcContextSpace ::=
                                        ENUMERATED {
                                             dummy, by1024, by2048, by4096,
                                             by8192 }
                                        ENUMERATED { by16384, by32768, by65536, by131072 }
MaxHcContextSpace-r5-ext ::=
                                    ENUMERATED {
MaxROHC-ContextSessions-r4 ::=
                                             s2, s4, s8, s12, s16, s24, s32, s48,
                                             s64, s128, s256, s512, s1024, s16384 }
MaximumAM-EntityNumberRLC-Cap ::=
                                    ENUMERATED {
                                        dummy, am4, am5, am6,
                                        am8, am16, am30 }
-- Actual value MaximumBitRate = IE value * 16
MaximumBitRate ::=
                                    INTEGER (0..32)
MaximumRLC-WindowSize ::=
                                    ENUMERATED { mws2047, mws4095 }
MaxNoDPDCH-BitsTransmitted ::=
                                    ENUMERATED {
                                        b600, b1200, b2400, b4800,
                                         b9600, b19200, b28800, b38400,
```

```
b48000, b57600 }
MaxNoBits ::=
                                      ENUMERATED {
                                          b640, b1280, b2560, b3840, b5120,
                                          b6400, b7680, b8960, b10240,
                                          b20480, b40960, b81920, b163840 }
                                      ENUMERATED {
MaxNoPhysChBitsReceived ::=
                                          dummy, b1200, b2400, b3600,
                                          b4800, b7200, b9600, b14400,
                                          b19200, b28800, b38400, b48000,
                                          b57600, b67200, b76800 }
MaxNoSCCPCH-RL ::=
                                      ENUMERATED {
                                         rl1 }
                                      ENUMERATED {
MaxNumberOfTF ::=
                                         tf32, tf64, tf128, tf256,
                                          tf512, tf1024 }
MaxNumberOfTFC-DL ::=
                                      ENUMERATED {
                                          tfc16, tfc32, tfc48, tfc64, tfc96,
                                          tfc128, tfc256, tfc512, tfc1024 }
                                      ENUMERATED {
MaxNumberOfTFC-III ::=
                                          dummy1, dummy2, tfc16, tfc32, tfc48, tfc64,
                                          tfc96, tfc128, tfc256, tfc512, tfc1024 }
-- the values 1 to 4 for MaxPhysChPerFrame are not used in this version of the protocol
                                    INTEGER (1..224)
MaxPhysChPerFrame ::=
MaxPhysChPerFrame-768 ::=
                                     INTEGER (1..448)
                                    INTEGER (1..96)
MaxPhysChPerSubFrame-r4 ::=
MaxPhysChPerTimeslot ::=
                                     ENUMERATED {
                                         ts1, ts2 }
MaxPhysChPerTimeslot-LCR-r7 ::=
                                    INTEGER (1..4)
 - the values 1 to 4 for MaxPhysChPerTS are not used in this version of the protocol
                                     INTEGER (1..16)
MaxPhysChPerTS ::=
MaxPhysChPerTS-768 ::=
                                     INTEGER (1..32)
MaxSimultaneousCCTrCH-Count ::=
                                     INTEGER (1..8)
MaxSimultaneousTransChsDL ::=
                                      ENUMERATED {
                                         e4, e8, e16, e32 }
                                      ENUMERATED {
MaxSimultaneousTransChsUL ::=
                                          dummy, e4, e8, e16, e32 }
MaxTransportBlocksDL ::=
                                      ENUMERATED {
                                          tb4, tb8, tb16, tb32, tb48,
                                          tb64, tb96, tb128, tb256, tb512 }
MaxTransportBlocksUL ::=
                                      ENUMERATED {
                                          dummy, tb4, tb8, tb16, tb32, tb48, tb64, tb96, tb128, tb256, tb512 }
MaxTS-PerFrame ::=
                                      INTEGER (1..14)
MaxTS-PerSubFrame-r4 ::=
                                      INTEGER (1..6)
-- TABULAR: MeasurementCapability contains dependencies to UE-MultiModeRAT-Capability,
-- the conditional fields have been left mandatory for now.
MeasurementCapability ::= SEQUENCE {
    downlinkCompressedMode
                                          CompressedModeMeasCapability,
    uplinkCompressedMode
                                         CompressedModeMeasCapability
}
MeasurementCapabilityExt ::=
                                    SEQUENCE {
    compressedModeMeasCapabFDDList CompressedModeMeasCapabFDDList, compressedModeMeasCapabTDDList OPTIONAL,
    compressedModeMeasCapabGDList CompressedModeMeasCapabGSMList OPTIONAL,
compressedModeMeasCapabGSMList CompressedModeMeasCapabGSMList OPTIONAL,
    compressedModeMeasCapabMC
                                         CompressedModeMeasCapabMC
                                                                          OPTIONAL
```

```
asurementCapabilityExt2 ::= SEQUENCE{
    compressedModeMeasCapabFDDList CompressedModeMeasCapabFDDList2,
MeasurementCapabilityExt2 ::=
    compressedModeMeasCapabTDDList
                                          CompressedModeMeasCapabTDDList OPTIONAL, CompressedModeMeasCapabGSMList OPTIONAL, CompressedModeMeasCapabMC OPTIONAL
    compressedModeMeasCapabGSMList
    compressedModeMeasCapabMC
}
MeasurementCapability-r4-ext ::=
                                      SEQUENCE {
   downlinkCompressedMode-LCR
                                      CompressedModeMeasCapability-LCR-r4,
    uplinkCompressedMode-LCR
                                           CompressedModeMeasCapability-LCR-r4
}
MessageAuthenticationCode ::=
                                     BIT STRING (SIZE (32))
MinimumSF-DL ::=
                                       ENUMERATED {
                                          sf1, sf16 }
MinimumSF-DL-768 ::=
                                       ENUMERATED {
                                          sf1, sf32 }
MinimumSF-UL ::=
                                       ENUMERATED {
                                          sf1, sf2, sf4, sf8, dummy }
MultiModeCapability ::=
                                       ENUMERATED {
                                          tdd, fdd, fdd-tdd }
MultiRAT-Capability ::= SEQUENCE {
    supportOfGSM BOOLEA
    supportOfGSM
                                         BOOLEAN,
    supportOfMulticarrier
                                           BOOLEAN
MultiModeRAT-Capability-v590ext ::= SEQUENCE {
    supportOfUTRAN-ToGERAN-NACC
MultiModeRAT-Capability-v680ext ::= SEQUENCE {
                                          ENUMERATED { doesSupportHandoverToGAN }
    supportOfHandoverToGAN
                                                                                         OPTIONAL
}
MultiModeRAT-Capability-v770ext ::= SEQUENCE {
                                          ENUMERATED { doesSupportPSHandoverToGAN }
    supportOfPSHandoverToGAN
                                                                                          OPTIONAL
N-300 ::=
                                      INTEGER (0..7)
                                      INTEGER (0..7)
N-301 ::=
                                      INTEGER (0..7)
N-302 ::=
                                       INTEGER (0..7)
N-304 ::=
                                       INTEGER (1..8)
N-308 ::=
                                       INTEGER (0..7)
N-310 ::=
N-312 ::=
                                       ENUMERATED {
                                          s1, s50, s100, s200, s400,
                                           s600, s800, s1000 }
N-312ext ::=
                                       ENUMERATED {
                                          s2, s4, s10, s20 }
                                           ENUMERATED {
N-312-r5 ::=
                                           s1, s2, s4, s10, s20,
s50, s100, s200, s400,
                                           s600, s800, s1000 }
                                       ENUMERATED {
N-313 ::=
                                          s1, s2, s4, s10, s20,
                                            s50, s100, s200 }
                                       ENUMERATED {
N-315 ::=
                                          s1, s50, s100, s200, s400,
                                           s600, s800, s1000 }
                                       ENUMERATED {
N-315ext ::=
```

```
s2, s4, s10, s20 }
                                        ENUMERATED {
N-315-r5 ::=
                                        s1, s2, s4, s10, s20,
                                        s50, s100, s200, s400,
                                        s600, s800, s1000 }
                                   INTEGER (1..64)
N-AccessFails ::=
                                   INTEGER (1..64)
N-AP-RetransMax ::=
NetworkAssistedGANSS-Supported-List ::= SEQUENCE (SIZE (1..maxGANSS)) OF SEQUENCE {
                                        ENUMERATED {
    qANSS-Id
                                           spare8, spare7, spare6, spare5, spare4,
                                            spare3, spare2, spare1 } OPTIONAL,
    gANSS-Mode
                                        GANSS-Mode,
    gANSS-SignalId
                                       GANSS-Signal-Id
                                                                           OPTIONAL,
    supportForUE-GANSS-TimingOfCellFrames BOOLEAN,
    supportForUE-GANSS-CarrierPhaseMeasurement BOOLEAN
                                                                           OPTIONAL
}
NetworkAssistedGPS-Supported ::=
                                    ENUMERATED {
                                       networkBased,
                                        ue-Based.
                                        bothNetworkAndUE-Based,
                                        noNetworkAssistedGPS }
NF-BO-AllBusy ::=
                                    INTEGER (0..31)
NF-BO-NoAICH ::=
                                   INTEGER (0..31)
NF-BO-Mismatch ::=
                                   INTEGER (0..127)
                                    INTEGER (0..63)
NS-BO-Busy ::=
                                    INTEGER (0..28)
NS-IP ::=
P-TMSI-and-RAI-GSM-MAP ::=
                                    SEOUENCE {
   p-TMSI
                                        P-TMSI-GSM-MAP,
                                        RAI
PagingCause ::=
                                    ENUMERATED {
                                        terminatingConversationalCall,
                                        terminatingStreamingCall,
                                        terminatingInteractiveCall,
                                        {\tt terminatingBackgroundCall,}
                                        terminatingHighPrioritySignalling,
                                        terminatingLowPrioritySignalling,
                                        terminatingCauseUnknown,
                                        spare
 }
PagingRecord ::=
                                  CHOICE {
    cn-Identity
                                       SEQUENCE {
        pagingCause
                                           PagingCause,
        cn-DomainIdentity
                                            CN-DomainIdentity,
        cn-pagedUE-Identity
                                            CN-PagedUE-Identity
    utran-Identity
                                        SEQUENCE {
        u-RNTI
                                           U-RNTI,
        cn-OriginatedPage-connectedMode-UE SEQUENCE {
           pagingCause
                                                PagingCause,
           cn-DomainIdentity
                                                CN-DomainIdentity,
           pagingRecordTypeID
                                                PagingRecordTypeID
                                                                            OPTIONAL
    }
}
PagingRecord2-r5 ::=
                                    CHOICE {
    utran-SingleUE-Identity
                                       SEQUENCE {
       u-RNTI
                                          U-RNTI,
        cn-OriginatedPage-connectedMode-UE SEQUENCE {
           pagingCause
                                                PagingCause,
           cn-DomainIdentity
                                                CN-DomainIdentity,
            pagingRecordTypeID
                                                PagingRecordTypeID
        }
                                                                            OPTIONAL,
```

```
rrc-ConnectionReleaseInformation
                                              RRC-ConnectionReleaseInformation
    utran-GroupIdentity
                                            SEQUENCE ( SIZE (1 .. maxURNTI-Group) ) OF
                                                GroupIdentityWithReleaseInformation
PagingRecordList ::=
                                    SEQUENCE (SIZE (1..maxPage1)) OF
                                        PagingRecord
PagingRecord2List-r5 ::=
                                    SEQUENCE (SIZE (1..maxPage1)) OF
                                       PagingRecord2-r5
   P-Capability ::= SEQUENCE {
losslessSRNS-RelocationSupport BOOLEAN,
PDCP-Capability ::=
    -- If present, the "maxHcContextSpace" in the IE "PDCP-Capability-r5-ext" overrides the
    -- "supported" value in this IE. The value in this IE may be used by a pre-REL-5 UTRAN.
    supportForRfc2507
                                        CHOICE {
                                            NULL
       notSupported
        supported
                                            MaxHcContextSpace
}
PDCP-Capability-r4-ext ::=
                                 SEQUENCE {
    supportForRfc3095
                                    CHOICE {
       notSupported
                                            NULT.
                                            SEQUENCE {
        supported
           maxROHC-ContextSessions
reverseCompressionDepth
                                            MaxROHC-ContextSessions-r4 DEFAULT s16,
                                                INTEGER (0..65535) DEFAULT 0
        }
    }
}
PDCP-Capability-r5-ext ::= SEQUENCE {
    supportForRfc3095ContextRelocation BOOLEAN,
    {\tt maxHcContextSpace}
                                            MaxHcContextSpace-r5-ext OPTIONAL
}
PDCP-Capability-r5-ext2 ::= SEQUENCE { losslessDLRLC-PDUSizeChange ENUMER
                                    ENUMERATED { true }
                                                                             OPTIONAL
}
PDCP-Capability-v770ext ::=
                                  SEQUENCE {
                                      ENUMERATED { true }
   reservedForFutureUse
                                                                           OPTIONAL
{\tt PhysicalChannelCapability ::= } \qquad {\tt SEQUENCE } \big\{
                                     SEQUENCE {
        fddPhysChCapability
                                            DL-PhysChCapabilityFDD,
            downlinkPhysChCapability
            uplinkPhysChCapability
                                                UL-PhysChCapabilityFDD
                                                  OPTIONAL,
        -- tddPhysChCapability describes the 3.84Mcps TDD physical channel capability
                                 SEQUENCE {
        tddPhysChCapability
            downlinkPhysChCapability
                                               DL-PhysChCapabilityTDD,
            uplinkPhysChCapability
                                                UL-PhysChCapabilityTDD
        }
                                                    OPTIONAL
}
PhysicalChannelCapability-v770ext ::= SEQUENCE {
    fddPhysChCapability
                                            SEQUENCE {
        downlinkPhysChCapability
                                                DL-PhysChCapabilityFDD-v770ext,
        uplinkPhysChCapability
                                                UL-PhysChCapabilityFDD-v770ext
           OPTIONAL,
    tddPhysChCapability-384
                                            SEQUENCE {
        -- No TDD384 DL physical channel capability extension
        uplinkPhysChCapability
                                                UL-PhysChCapabilityTDD-384-v770ext
           OPTIONAL,
    tddPhysChCapability-768
                                            SEQUENCE {
       PhysChCapability-768
downlinkPhysChCapability
                                                DL-PhysChCapabilityTDD-768,
        uplinkPhysChCapability
                                                UL-PhysChCapabilityTDD-768
           OPTIONAL,
    tddPhysChCapability-128
                                          SEQUENCE {
       PnysChCapability-128
downlinkPhysChCapability
                                            DL-PhysChCapabilityTDD-128-v770ext,
        uplinkPhysChCapability
                                                UL-PhysChCapabilityTDD-128-v770ext
           OPTIONAL
}
PhysicalChannelCapabilityInfo-v770ext ::= SEQUENCE {
    tddPhysChCapability-768
                                            SEQUENCE {
```

```
downlinkPhysChCapability
                                                DL-PhysChCapabilityInfoTDD-768,
        uplinkPhysChCapability
                                                UL-PhysChCapabilityTDD
           OPTIONAL,
    tddPhysChCapability-128
                                            SEQUENCE {
        uplinkPhysChCapability
                                                UL-PhysChCapabilityInfoTDD-128-v770ext
           OPTIONAL
}
-- PhysicalChannelCapability-LCR-r4 describes the 1.28Mcps TDD physical channel capability
PhysicalChannelCapability-LCR-r4 ::= SEQUENCE {
        tdd128-PhysChCapability
                                               SEQUENCE {
            downlinkPhysChCapability
                                                DL-PhysChCapabilityTDD-LCR-r4,
                                                UL-PhysChCapabilityTDD-LCR-r4
            uplinkPhysChCapability
                                                    OPTIONAL
}
-- PhysicalChannelCapability-hspdsch-r5 describes the HS-PDSCH physical channel capability
PhysicalChannelCapability-hspdsch-r5 ::= SEQUENCE {
    fdd-hspdsch
        supported
                                                        SEQUENCE {
           -- hsdsch-physical-layer-category values shall be restricted to the range [1..12]
            -- even if the UE physical capability category is above 12.
            hsdsch-physical-layer-category
                                                            HSDSCH-physical-layer-category,
            -- dummy and dummy2 are not used in this version of the specification
            -- and if received they should be ignored.
            dummy
                                                            BOOLEAN.
            dummy2
                                                            BOOLEAN
        unsupported
                                                        NULL
    tdd384-hspdsch
                                                    CHOICE {
                                                        HSDSCH-physical-layer-category,
        supported
        unsupported
    tdd128-hspdsch
                                                    CHOICE {
        supported
                                                        HSDSCH-physical-layer-category,
        unsupported
}
PNBSCH-Allocation-r4 ::=
                                        SEQUENCE {
       numberOfRepetitionsPerSFNPeriod ENUMERATED {
                                            c2, c3, c4, c5, c6, c7, c8, c9, c10,
                                            c12, c14, c16, c18, c20, c24, c28, c32,
                                            c36, c40, c48, c56, c64, c72, c80 }
}
                                    ENUMERATED {
ProtocolErrorCause ::=
                                        asn1-ViolationOrEncodingError,
                                        messageTypeNonexistent,
                                        messageNotCompatibleWithReceiverState,
                                        ie-ValueNotComprehended,
                                        informationElementMissing,
                                        messageExtensionNotComprehended,
                                        spare2, spare1 }
ProtocolErrorIndicator ::=
                                    ENUMERATED {
                                        noError, errorOccurred }
ProtocolErrorIndicatorWithMoreInfo ::=
                                    CHOICE {
    noError
                                        NULL,
                                        SEQUENCE {
    errorOccurred
        rrc-TransactionIdentifier
                                            RRC-TransactionIdentifier,
        protocolErrorInformation
                                            ProtocolErrorInformation
}
ProtocolErrorMoreInformation ::=
                                    SEOUENCE
                                        CHOICE {
    diagnosticsType
                                            CHOICE {
        type1
            asn1-ViolationOrEncodingError
                                                NULL.
            messageTypeNonexistent
                                                NULL,
            {\tt messageNotCompatibleWithReceiverState}
                                                IdentificationOfReceivedMessage,
            ie-ValueNotComprehended
                                                IdentificationOfReceivedMessage,
            \verb|conditionalInformationElementError| IdentificationOfReceivedMessage, \\
            messageExtensionNotComprehended
                                                IdentificationOfReceivedMessage,
```

```
spare1
                                                 NULL,
            spare2
                                                 NULL
        },
                                            NULL
        spare
    }
}
                               ENUMERATED {
RadioFrequencyBandFDD ::=
    -- fdd2100, fdd1900, fdd1800 correspond to Band I, Band II and Band III respectively
                                         fdd2100,
                                         fdd1900,
                                         fdd1800.
                                        bandVI,
                                         bandIV,
                                         bandV,
                                         bandVII,
                                         extension-indicator }
RadioFrequencyBandFDD2 ::=
                                    ENUMERATED {
                                        bandVIII,
                                         bandIX,
                                         bandX,
                                         bandXI,
                                        bandXII,
                                         bandXIII,
                                        bandXIV,
                                        bandXV,
                                         bandXVI,
                                        bandXVII,
                                         bandXVIII,
                                         bandXIX,
                                         bandXX,
                                         bandXXI,
                                        bandXXII,
                                         extension-indicator }
RadioFrequencyBandTDDList ::=
                                    ENUMERATED {
                                        a, b, c, ab, ac, bc, abc, spare }
                                    ENUMERATED {
RadioFrequencyBandTDDList-r7 ::=
                                         a, b, c, d, ab, ac, ad, bc, bd, cd, abc, abd, acd, bcd,
                                         abcd, spare }
                                    ENUMERATED {
RadioFrequencyBandTDD ::=
                                        a, b, c, d }
                                    ENUMERATED {
RadioFrequencyBandGSM ::=
                                        gsm450,
                                         gsm480,
                                        gsm850,
                                         gsm900P,
                                         qsm900E,
                                         gsm1800,
                                         gsm1900,
                                         spare9, spare8, spare7, spare6, spare5,
                                         spare4, spare3, spare2, spare1}
Rb-timer-indicator ::=
                                    SEQUENCE {
    t314-expired
                                        BOOLEAN,
    t315-expired
                                        BOOLEAN }
Re-EstablishmentTimer ::=
                                    ENUMERATED {
                                        useT314, useT315
}
RedirectionInfo ::=
                                    CHOICE {
    frequencyInfo
                                        FrequencyInfo,
    interRATInfo
                                        InterRATInfo
}
RedirectionInfo-r6 ::=
                                    CHOICE {
    frequencyInfo
                                         FrequencyInfo,
                                         InterRATInfo-r6
    interRATInfo
}
RejectionCause ::=
                                     ENUMERATED {
                                        congestion,
                                         unspecified }
```

```
ENUMERATED {
ReleaseCause ::=
                                      normalEvent,
                                       unspecified,
                                       pre-emptiveRelease,
                                       congestion,
                                       re-establishmentReject,
                                       directed signalling connection re-establishment,
                                       userInactivity,
                                       spare }
RF-Capability ::=
                                   SEQUENCE {
           ue-PowerClass
       fddRF-Capability
                                         UE-PowerClass,
           txRxFrequencySeparation
                                           TxRxFrequencySeparation
                                          OPTIONAL,
                                                  SEOUENCE {
       tddRF-Capability
                              UE-PowerClass,
           ue-PowerClass
           radioFrequencyTDDBandList RadioFrequencyBandTDDList,
           chipRateCapability ChipRateCapability
                                          OPTIONAL
}
                                     SEQUENCE {
RF-Capability-r4-ext ::=
                           SEQUENCE (
SEQ
UE-PowerClass,
       tddRF-Capability
                                                  SEQUENCE {
           ue-PowerClass
           {\tt radioFrequencyBandTDDList} \quad {\tt RadioFrequencyBandTDDList},
           chipRateCapability ChipRateCapability
       }
                                          OPTIONAL
}
RF-Capability-v770ext ::=
                             SEQUENCE {
    -- If TDD384 and/or TDD128 RF capability is indicated in IEs 'RF-Capability' or
   -- 'RF-Capability-r4-ext', the corresponding IE 'RadioFrequencyBandTDDList-r7' shall
    -- be included in this IE.
   tdd384RF-Capability
                                       RadioFrequencyBandTDDList-r7
   tdd768RF-Capability
                                      SEQUENCE {
       ue-PowerClass
                                          UE-PowerClass,
       radioFrequencyBandTDDList
                                          RadioFrequencyBandTDDList-r7
        -- The element 'chipRateCapability' = 'mcps7-68'
   tdd128RF-Capability
                                      RadioFrequencyBandTDDList-r7
                                                                            OPTIONAL
}
RLC-Capability ::=
                                  SEQUENCE {
   -- If present, the "totalRLC-AM-BufferSize" in the IE "RLC-Capability-r5-ext" overrides the
    -- corresponding value in this IE. The value in this IE may be used by a pre-REL-5 UTRAN.
   totalRLC-AM-BufferSize TotalRLC-AM-BufferSize, maximumRLC-WindowSize MaximumRLC-WindowSize,
   maximumAM-EntityNumber
                                     MaximumAM-EntityNumberRLC-Cap
}
                           SEQUENCE {
RLC-Capability-r5-ext ::=
   totalRLC-AM-BufferSize
                                    TotalRLC-AM-BufferSize-r5-ext OPTIONAL
}
   supportOfTwoLogicalChannel SEQUENCE {
SUPPORTOR SEQUENCE {
RLC-Capability-v770ext ::=
                                   BOOLEAN
RRC-ConnectionReleaseInformation ::= CHOICE {
   noRelease
                                          NULL,
                                           SEQUENCE {
   release
       releaseCause
                                               ReleaseCause
}
                                  INTEGER (0..15)
RRC-MessageSequenceNumber ::=
RRC-MessageSequenceNumberList ::= SEQUENCE (SIZE (4..5)) OF
                                     RRC-MessageSequenceNumber
RRC-StateIndicator ::=
                                  ENUMERATED {
                                       cell-DCH, cell-FACH, cell-PCH, ura-PCH }
RRC-TransactionIdentifier ::=
                                  INTEGER (0..3)
```

```
S-RNTI ::=
                                     BIT STRING (SIZE (20))
S-RNTI-2 ::=
                                     BIT STRING (SIZE (10))
SecurityCapability ::=
                                      SEQUENCE {
   cipheringAlgorithmCap
                                         BIT STRING {
                                          -- For each bit value "0" means false/ not supported
                                              spare15(0),
                                              spare14(1),
                                              spare13(2),
                                              spare12(3),
                                              spare11(4),
                                              spare10(5),
                                              spare9(6),
                                              spare8(7),
                                              spare7(8),
                                              spare6(9),
                                              spare5(10),
                                              spare4(11),
                                              spare3(12),
                                              uea2(13),
                                              uea1(14),
                                              uea0(15)
                                              } (SIZE (16)),
                                          BIT STRING {
    integrityProtectionAlgorithmCap
                                          -- For each bit value "0" means false/ not supported
                                              spare15(0),
                                              spare14(1),
                                              spare13(2),
                                              spare12(3),
                                              spare11(4),
                                              spare10(5),
                                              spare9(6),
                                              spare8(7),
                                              spare7(8),
                                              spare6(9),
                                              spare5(10),
                                              spare4(11),
                                              spare3(12),
                                              uia2(13),
                                              uia1(14),
                                              spare0(15)
                                                   (SIZE (16))
}
Serving-HSDSCH-CellInformation ::=
                                         SEQUENCE {
                                    DeltaACK
    deltaACK
                                                                   OPTIONAL.
    {\tt deltaNACK}
                                DeltaNACK
HARQ-Preamble-Mode,
PrimaryCPICH-Info
                                                                   OPTIONAL,
   harq-Preamble-Mode
                                   DL-HSPDSCH-Information OPTIONAL,
HARQ-Info
   primaryCPICH-Info
    dl-hspdsch-Information
   harqInfo
    mac-hsResetIndicator
                                     ENUMERATED { true }
                                                                   OPTIONAL
{\tt Serving-HSDSCH-CellInformation-r7} ::= {\tt SEQUENCE} \ \{
    {\tt deltaACK}
                                     DeltaACK
                                                                   OPTIONAL,
    {\tt deltaNACK}
                                    DeltaNACK
                                                                   OPTIONAL,
   harq-Preamble-Mode
                                    HARQ-Preamble-Mode,
PrimaryCPICH-Info
   primaryCPICH-Info
                                                                  OPTIONAL.
                                   DL-HSPDSCH-Information-r7 OPTIONAL,
    dl-hspdsch-Information
    harqInfo
                                     HARQ-Info-r7
                                                                   OPTIONAL,
    mac-hsResetIndicator
                                     ENUMERATED { true }
                                                                  OPTIONAL
}
SimultaneousSCCPCH-DPCH-Reception ::= CHOICE {
    {\tt notSupported}
                                          NULL,
                                          SEQUENCE {
    \operatorname{supported}
                                              MaxNoSCCPCH-RL,
        maxNoSCCPCH-RL
        -- simultaneousSCCPCH-DPCH-DPDCH-Reception is applicable only if
        -- the IE Support of PDSCH = TRUE
        -- Note: the reference to DPDCH in the element name below is incorrect (see tabular). The
        -- name is not changed, to keep it aligned with R99.
        simultaneousSCCPCH-DPCH-DPDCH-Reception
                                                      BOOLEAN
}
                                    BIT STRING (SIZE (12))
SRNC-Identity ::=
```

```
START-Value ::=
                                     BIT STRING (SIZE (20))
STARTList ::=
                                     SEQUENCE (SIZE (1..maxCNdomains)) OF
                                         STARTSingle
STARTSingle ::=
                                     SEQUENCE {
                                         CN-DomainIdentity,
   cn-DomainIdentity
    start-Value
                                          START-Value
                                    ENUMERATED {
SystemSpecificCapUpdateReq ::=
SystemSpecificCapUpdateReq-v590ext ::=
                                             ENUMERATED {
                                         geranIu }
SystemSpecificCapUpdateReq-r5 ::= ENUMERATED {
                                          gsm, geranIu }
{\tt SystemSpecificCapUpdateReqList} ::= {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxSystemCapability})) \ {\tt OF} \\
                                          SystemSpecificCapUpdateReq
SystemSpecificCapUpdateReqList-r5 ::= SEQUENCE (SIZE (1..maxSystemCapability)) OF
                                          SystemSpecificCapUpdateReq-r5
T-300 ::=
                                      ENUMERATED {
                                          ms100, ms200, ms400, ms600, ms800,
                                          ms1000, ms1200, ms1400, ms1600,
                                          ms1800, ms2000, ms3000, ms4000, ms6000, ms8000 }
T-301 ::=
                                      ENUMERATED {
                                          ms100, ms200, ms400, ms600, ms800,
                                          ms1000, ms1200, ms1400, ms1600,
                                          ms1800, ms2000, ms3000, ms4000, ms6000, ms8000, spare }
                                      ENUMERATED {
T-302 ::=
                                          ms100, ms200, ms400, ms600, ms800,
                                          ms1000, ms1200, ms1400, ms1600,
                                          ms1800, ms2000, ms3000, ms4000,
                                          ms6000, ms8000, spare }
T-304 ::=
                                      ENUMERATED {
                                          ms100, ms200, ms400,
                                          ms1000, ms2000, spare3, spare2, spare1 }
T-305 ::=
                                      ENUMERATED {
                                         noUpdate, m5, m10, m30, m60, m120, m360, m720 }
T-307 ::=
                                      ENUMERATED {
                                         s5, s10, s15, s20,
                                          s30, s40, s50, spare }
                                      ENUMERATED {
T-308 ::=
                                          ms40, ms80, ms160, ms320 }
T-309 ::=
                                      INTEGER (1..8)
                                      ENUMERATED {
T-310 ::=
                                          ms40, ms80, ms120, ms160,
                                          ms200, ms240, ms280, ms320 }
T-311 ::=
                                      ENUMERATED {
                                         ms250, ms500, ms750, ms1000,
                                          ms1250, ms1500, ms1750, ms2000 }
-- The value 0 for T-312 is not used in this version of the specification
                                      INTEGER (0..15)
T-312 ::=
T-313 ::=
                                      INTEGER (0..15)
                                      ENUMERATED {
T-314 ::=
                                          s0, s2, s4, s6, s8,
                                          s12, s16, s20 }
```

```
ENUMERATED {
T-315 ::=
                                            s0, s10, s30, s60, s180,
                                             s600, s1200, s1800 }
                                         ENUMERATED {
T-316 ::=
                                            s0, s10, s20, s30, s40,
                                             s50, s-inf, spare }
-- All the values are changed to "infinity" in Rel-5
T-317 ::=
                                         ENUMERATED {
                                             infinity0, infinity1, infinity2, infinity3, infinity4,
infinity5, infinity6, infinity7}
T-318 ::=
                                         ENUMERATED {
                                            ms250, ms500, ms750, ms1000, ms1250, ms1500,
                                             ms1750, ms2000, ms3000, ms4000, ms6000, ms8000,
                                             ms10000, ms12000, ms16000 }
T-319 ::=
                                         ENUMERATED {
                                             ms80, ms160, ms320, ms640, ms1280, ms2560, ms5120 }
T-CPCH ::=
                                         ENUMERATED {
                                            ct0, ct1 }
TMSI-and-LAI-GSM-MAP ::=
                                         SEQUENCE {
                                            TMSI-GSM-MAP,
    tmsi
                                             LAI
}
                                        OCTET STRING (SIZE (2..17))
TMSI-DS-41 ::=
TotalRLC-AM-BufferSize ::=
                                         ENUMERATED {
                                             dummy, kb10, kb50, kb100,
                                             kb150, kb500, kb1000, spare }
TotalRLC-AM-BufferSize-r5-ext ::= ENUMERATED {
                                            kb200, kb300, kb400, kb750 }
-- Actual value TransmissionProbability = IE value * 0.125
TransmissionProbability ::=
                                 INTEGER (1..8)
TransportChannelCapability ::= SEQUENCE {
    dl-TransChCapability DL-TransChCapability,
    ul-TransChCapability UL-TransChCapability
}
                                        CHOICE {
TurboSupport ::=
                                             NULL,
    notSupported
    supported
                                             MaxNoBits
-- Values defined as spare shall not be sent in this version of the protocol. If a spare value is
-- received, it should be interpreted as 'default-RxTX-sparation'.
TxRxFrequencySeparation ::= ENUMERATED {
                                             default-TxRx-separation, spare2, spare1 }
U-RNTI ::=
                                        SEQUENCE {
    srnc-Identity
                                            SRNC-Identity,
    s-RNTT
                                             S-RNTT
U-RNTI-Group ::=
                                        CHOICE {
-- TABULAR: not following the tabular strictly, but this will most likely save bits
                                             NULL,
    u-RNTI-BitMaskIndex-b1
                                             BIT STRING (SIZE (31)),
    u-RNTI-BitMaskIndex-b2
                                             BIT STRING (SIZE (30)),
    u-RNTI-BitMaskIndex-b3
                                            BIT STRING (SIZE (29)),
                                            BIT STRING (SIZE (28)),
BIT STRING (SIZE (27)),
    u-RNTI-BitMaskIndex-b4
    u-RNTI-BitMaskIndex-b5
                                 BIT STRING (SIZE (25)),
BIT STRING (SIZE (24)),
BIT STRING (SIZE (24)),
BIT STRING (SIZE (23)),
BIT STRING (SIZE (22)),
BIT STRING (SIZE (21)),
BIT STRING (SIZE (20)),
BIT STRING (SIZE (19)),
    u-RNTI-BitMaskIndex-b6
                                          BIT STRING (SIZE (26)),
    u-RNTI-BitMaskIndex-b7
    u-RNTI-BitMaskIndex-b8
    u-RNTI-BitMaskIndex-b9
    u-RNTI-BitMaskIndex-b10
    u-RNTI-BitMaskIndex-b11
    u-RNTI-BitMaskIndex-b12
    u-RNTI-BitMaskIndex-b13
```

```
BIT STRING (SIZE (18)),
BIT STRING (SIZE (17)),
BIT STRING (SIZE (16)),
BIT STRING (SIZE (16)),
BIT STRING (SIZE (15)),
BIT STRING (SIZE (14)),
BIT STRING (SIZE (13)),
BIT STRING (SIZE (12)),
BIT STRING (SIZE (10)),
BIT STRING (SIZE (10)),
BIT STRING (SIZE (9)),
BIT STRING (SIZE (9)),
BIT STRING (SIZE (8)),
BIT STRING (SIZE (7)),
BIT STRING (SIZE (6)),
BIT STRING (SIZE (5)),
BIT STRING (SIZE (4)),
BIT STRING (SIZE (3)),
BIT STRING (SIZE (3)),
BIT STRING (SIZE (2)),
BIT STRING (SIZE (2)),
BIT STRING (SIZE (2)),
     u-RNTI-BitMaskIndex-b14
     u-RNTI-BitMaskIndex-b15
u-RNTI-BitMaskIndex-b16
     u-RNTI-BitMaskIndex-b17
u-RNTI-BitMaskIndex-b18
     u-RNTI-BitMaskIndex-b19
     u-RNTI-BitMaskIndex-b20
u-RNTI-BitMaskIndex-b21
     u-RNTI-BitMaskIndex-b22
u-RNTI-BitMaskIndex-b23
u-RNTI-BitMaskIndex-b24
     u-RNTI-BitMaskIndex-b25
u-RNTI-BitMaskIndex-b26
     u-RNTI-BitMaskIndex-b27
     u-RNTI-BitMaskIndex-b28
u-RNTI-BitMaskIndex-b29
     u-RNTI-BitMaskIndex-b30
     u-RNTI-BitMaskIndex-b31
}
                                               SEQUENCE {
U-RNTI-Short ::=
     ITI-Short ::=
  srnc-Identity
                                                      SRNC-Identity,
     s-RNTI-2
                                                       S-RNTI-2
}
                                                      SEQUENCE {
UE-CapabilityContainer-IEs ::=
-- Container for transparent transfer of capability information not related to
-- features for which early implementation is desired
          ue-RadioAccessCapability-v690ext UE-RadioAccessCapability-v690ext,
ue-RATSpecificCapability-v690ext InterRAT-UE-RadioAccessCapability-v690ext OPTIONAL,
v6b0NonCriticalExtensions SEQUENCE {
                ue-RadioAccessCapability-v6b0ext UE-RadioAccessCapability-v6b0ext-IEs, v6e0NonCriticalExtensions SEQUENCE {
                      ue-RadioAccessCapability-v770ext
v790nonCriticalExtensions
UE-RadioAccessCapability-v770ext-IEs,
SEQUENCE {
                                ue-RadioAccessCapability-v790ext UE-RadioAccessCapability-v790ext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
                                    OPTIONAL
                                OPTIONAL
                           OPTIONAL
                }
                      OPTIONAL
}
UE-RadioAccessCapability-v6b0ext-IEs ::= SEQUENCE {
     -- User equipment IEs
          supportForSIB11bis
                                                           ENUMERATED { true }
                                                                                                 OPTIONAL
UE-RadioAccessCapability-v6e0ext-IEs ::= SEQUENCE {
     -- User equipment IEs
          supportForFDPCH
                                                           ENUMERATED { true }
                                                                                                 OPTIONAL
{\tt UE-RadioAccessCapability-v770ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
     -- User equipment IEs
          pdcp-Capability
                                                           PDCP-Capability-v770ext
                                                                                                                    OPTIONAL,
           rlc-Capability
                                                             RLC-Capability-v770ext,
                                                            RF-Capability-v770ext
           rf-Capability
                                                                                                                     OPTIONAL.
          physicalChannelCapability PhysicalChannelCapability-v770ext, multiModeRAT-Capability MultiModeRAT-Capability WultiModeRAT-Capability-v770ext, ue-PositioningCapability UE-PositioningCapability-v770ext,
           mac-ehsSupport
                                                            ENUMERATED { true }
                                                                                                                     OPTIONAL.
           ue-specificCapabilityInformation UE-SpecificCapabilityInformation-LCRTDD OPTIONAL
}
UE-RadioAccessCapability-v790ext-IEs ::= SEQUENCE {
     -- User equipment IEs
          OPTIONAL
                                                SEQUENCE {
UE-ConnTimersAndConstants ::=
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
                                                       T-301
     n-301
                                                        N-301
                                                                                                         DEFAULT 2,
                                                       T-302
     t-302
                                                                                                         DEFAULT ms4000,
```

```
n-302
                                         N - 302
                                                                              DEFAULT 3,
                                         T-304
                                                                              DEFAULT ms2000,
    t-304
   n-304
                                         N-304
                                                                              DEFAULT 2,
                                                                              DEFAULT m30,
    t-305
                                         T-305
    t-307
                                         T-307
                                                                              DEFAULT s30.
    t-308
                                         T-308
                                                                              DEFAULT ms160,
    t-309
                                         T-309
                                                                              DEFAULT 5,
                                                                              DEFAULT ms160.
    t-310
                                         T - 310
    n-310
                                         N-310
                                                                              DEFAULT 4,
    t-311
                                         T-311
                                                                              DEFAULT ms2000,
    t-312
                                         T-312
                                                                              DEFAULT 1,
    -- n-312 shall be ignored if n-312 in UE-ConnTimersAndConstants-v3a0ext is present, and the
    -- value of that element shall be used instead.
   n-312
                                         N-312
                                                                              DEFAULT s1,
    t-313
                                         T-313
                                                                              DEFAULT 3,
   n-313
                                         N-313
                                                                              DEFAULT s20,
                                                                              DEFAULT s12,
   t-314
                                         T-314
                                         T-315
                                                                              DEFAULT s180
    -- n-315 shall be ignored if n-315 in UE-ConnTimersAndConstants-v3a0ext is present, and the
    -- value of that element shall be used instead.
                                                                              DEFAULT s1.
   n-315
                                         N - 315
    t-316
                                         T-316
                                                                              DEFAULT s30,
    t-317
                                         T-317
                                                                              DEFAULT infinity4
}
UE-ConnTimersAndConstants-v3a0ext ::=
                                            SEQUENCE {
                                         N-312ext
                                                                                  OPTIONAL,
                                                                                  OPTIONAL
    n-315
                                         N-315ext
}
                                        SEQUENCE {
UE-ConnTimersAndConstants-r5 ::=
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
                                         T-301
    t.-301
                                                                              DEFAULT ms2000.
   n-301
                                         N-301
                                                                              DEFAULT 2,
    t-302
                                         T-302
                                                                              DEFAULT ms4000,
   n-302
                                         N-302
                                                                              DEFAULT 3,
                                                                              DEFAULT ms2000,
   t-304
                                         T-304
                                         N-304
   n-304
                                                                              DEFAULT 2.
    t-305
                                         T-305
                                                                              DEFAULT m30,
    t-307
                                         T-307
                                                                              DEFAULT s30,
    t-308
                                         T-308
                                                                              DEFAULT ms160,
    t.-309
                                         T - 309
                                                                              DEFAULT 5.
    t-310
                                         T-310
                                                                              DEFAULT ms160,
   n-310
                                         N-310
                                                                              DEFAULT 4,
    t-311
                                         T-311
                                                                              DEFAULT ms2000,
                                         T-312
    t-312
                                                                              DEFAULT 1.
   n-312
                                         N-312-r5
                                                                              DEFAULT s1
    t-313
                                         T-313
                                                                              DEFAULT 3,
                                         N-313
   n-313
                                                                              DEFAULT s20,
                                                                              DEFAULT s12,
    t-314
                                         T-314
                                                                              DEFAULT s180,
                                         T-315
    t-315
   n-315
                                         N-315-r5
                                                                              DEFAULT s1,
    t-316
                                         T-316
                                                                              DEFAULT s30,
                                         T-317
                                                                              DEFAULT infinity4
    t-317
}
UE-GANSSPositioning-Capability ::= SEQUENCE {
   networkAssistedGANSS-supportedList NetworkAssistedGANSS-Supported-List OPTIONAL
}
UE-IdleTimersAndConstants ::=
                                     SEQUENCE {
                                        T-300,
   n-300
                                         N-300,
                                         T-312.
    t.-312
    -- n-312 shall be ignored if n-312 in UE-IdleTimersAndConstants-v3a0ext is present, and the
    -- value of that element shall be used instead.
                                        N-312
}
UE-HSPA-Identities-r6 ::= SEQUENCE {
   new-H-RNTI
                                     H-RNTI
                                                                          OPTIONAL,
   newPrimary-E-RNTI
                                    E-RNTI
                                                                          OPTIONAL,
    newSecondary-E-RNTI
                                    E-RNTT
                                                                          OPTIONAL
UE-IdleTimersAndConstants-v3a0ext ::=
                                             SEQUENCE {
                                                                                  OPTIONAL
    n-312
                                         N-312ext
```

```
}
MultiRAT-Capability,
    multiModeCapability
                                       MultiModeCapability
                                   INTEGER (1..4)
UE-PowerClass ::=
UE-PowerClassExt ::=
                                    ENUMERATED {class1, class2, class3, class4,
                                        spare4, spare3, spare2, spare1 }
UE-RadioAccessCapability ::=
                                   SEQUENCE {
    -- UE-RadioAccessCapability is compatible with R99, although accessStratumReleaseIndicator
    -- is removed from this IE, since its encoding did not result in bits. The
    -- accessStratumReleaseIndicator is provided in the relevant REL-4 extension IEs.
    pdcp-Capability
                                        PDCP-Capability,
    rlc-Capability
                                       RLC-Capability,
    transportChannelCapability
                                       TransportChannelCapability,
    rf-Capability
                                       RF-Capability,
    physicalChannelCapability
                                       PhysicalChannelCapability,
                                     UE-MultiModeRAT-Capability,
    ue-MultiModeRAT-Capability
    securityCapability
                                       SecurityCapability,
                                   UE-Positioning-Capability,
    ue-positioning-Capability
    measurement Capability
                                       MeasurementCapability
                                                                   OPTIONAL
}
UE-RadioAccessCapabilityInfo ::= SEQUENCE {
   ue-RadioAccessCapability
                                       UE-RadioAccessCapability,
    ue-RadioAccessCapability-v370ext
                                       UE-RadioAccessCapability-v370ext
}
UE-RadioAccessCapability-v370ext ::=
                                        SEQUENCE {
                                       UE-RadioAccessCapabBandFDDList
    ue-RadioAccessCapabBandFDDList
}
UE-RadioAccessCapability-v380ext ::=
                                       SEQUENCE {
   ue-PositioningCapabilityExt-v380
                                           UE-PositioningCapabilityExt-v380
UE-RadioAccessCapability-v3a0ext ::=
                                       SEQUENCE {
   ue-PositioningCapabilityExt-v3a0
                                           UE-PositioningCapabilityExt-v3a0
UE-RadioAccessCapability-v3g0ext ::=
                                       SEQUENCE {
   ue-PositioningCapabilityExt-v3g0
                                           UE-PositioningCapabilityExt-v3g0
UE-RadioAccessCapability-v650ext ::= SEQUENCE {
    ue-RadioAccessCapabBandFDDList2 UE-RadioAccessCapabBandFDDList2,
    -- This IE shall be included if the UE also supports Band I-VII
   ue-RadioAccessCapabBandFDDList-ext UE-RadioAccessCapabBandFDDList-ext OPTIONAL
}
UE-RadioAccessCapability-v690ext ::= SEQUENCE {
        \verb|physicalchannelcapability-edch| PhysicalChannelCapability-edch-r6|,
        -- TABULAR: deviceType is MD in tabular description
        -- Default value is 'doesBenefitFromBatteryConsumptionOptimisation'
                      ENUMERATED { doesNotBenefitFromBatteryConsumptionOptimisation } OPTIONAL
}
UE-RadioAccessCapability-v7e0ext ::= SEQUENCE {
   -- User equipment IEs
       supportForTwoDRXSchemesInPCH
        supportForTwoDRXSchemesInPCH
supportEDPDCHPowerInterpolation
ENUMERATED { true }
                                                                                   OPTIONAL,
                                                                                   OPTIONAL
}
UE-RadioAccessCapability-v7f0ext ::= SEQUENCE {
                                           ENUMERATED { true }
    supportofTxDivOnNonMIMOChannel
                                                                                       OPTIONAL.
    -- IE physicalChannelCapability-LCR and ue-RadioAccessCapabilityComp-TDD128 shall only be
    -- included in InterRATHandoverInfo for 1.28 Mcps TDD, otherwise these IEs are not needed here.
    physicalChannelCapability-LCR PhysicalChannelCapability-LCR-r4
                                           UE-RadioAccessCapabilityComp-TDD128-v7f0ext OPTIONAL
    ue-RadioAccessCapabilityComp-TDD128
UE-RadioAccessCapabilityInfo-v770ext ::= SEQUENCE {
    rf-Capability
                                           RF-Capability-v770ext
                                                                                   OPTIONAL.
    physicalChannelCapability
                                           PhysicalChannelCapabilityInfo-v770ext,
```

```
ganssSupportIndication
                                           ENUMERATED { true }
                                                                                    OPTIONAL,
    mac-ehsSupport
                                            ENUMERATED { true }
                                                                                    OPTIONAL,
   ue-SpecificCapabilityInformation
                                           UE-SpecificCapabilityInformation-LCRTDD OPTIONAL
}
UE-RadioAccessCapabBandFDDList2 ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
                                           UE-RadioAccessCapabBandFDD2
UE-RadioAccessCapabBandFDD2 ::= SEQUENCE {
    {\tt radioFrequencyBandFDD2} \qquad \qquad {\tt RadioFrequencyBandFDD2} \,,
    fddRF-Capability
                                       SEQUENCE {
       ue-PowerClass
                                           UE-PowerClassExt.
        txRxFrequencySeparation
                                           TxRxFrequencySeparation
          OPTIONAL,
    measurementCapability2
                                      MeasurementCapabilityExt2
}
UE-PositioningCapabilityExt-v380 ::= SEQUENCE {
                                           BOOLEAN
   rx-tx-TimeDifferenceType2Capable
UE-PositioningCapabilityExt-v3a0 ::= SEQUENCE {
   validity-CellPCH-UraPCH
                                           ENUMERATED { true }
}
UE-PositioningCapabilityExt-v3g0 ::=
                                     SEQUENCE {
                                       ENUMERATED { true }
   sfn-sfnType2Capability
}
UE-PositioningCapability-v770ext ::= SEQUENCE {
   ue-GANSSPositioning-Capability UE-GANSSPositioning-Capability
                                                                          OPTIONAL
UE-RadioAccessCapabBandFDDList ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
                                           UE-RadioAccessCapabBandFDD
UE-RadioAccessCapabBandFDDList-ext ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
                                       UE-RadioAccessCapabBandFDD-ext
UE-RadioAccessCapabBandFDD ::= SEQUENCE{
   radioFrequencyBandFDD
                                RadioFrequencyBandFDD,
                                       SEQUENCE {
    fddRF-Capability
       ue-PowerClass
                                           UE-PowerClassExt,
       txRxFrequencySeparation
                                           TxRxFrequencySeparation
                                                                   OPTIONAL,
    measurementCapability
                                       MeasurementCapabilityExt
}
UE-RadioAccessCapabBandFDD-ext ::= SEQUENCE {
                                       RadioFrequencyBandFDD,
    radioFrequencyBandFDD
    compressedModeMeasCapabFDDList-ext CompressedModeMeasCapabFDDList-ext
}
UE-RadioAccessCapability-v4b0ext ::= SEQUENCE {
    pdcp-Capability-r4-ext
                                       PDCP-Capability-r4-ext,
    tdd-CapabilityExt
                                       SEQUENCE {
                                        RF-Capability-r4-ext,
       rf-Capability
       physicalChannelCapability-LCR PhysicalChannelCapability-LCI measurementCapability-r4-ext MeasurementCapability-r4-ext
                                           PhysicalChannelCapability-LCR-r4,
                                               OPTIONAL,
    -- IE " AccessStratumReleaseIndicator" is not needed in RRC CONNECTION SETUP COMPLETE
                                               AccessStratumReleaseIndicator OPTIONAL
    accessStratumReleaseIndicator
}
UE-RadioAccessCapabilityComp ::= SEQUENCE {
    totalAM-RLCMemoryExceeds10kB
                                           BOOLEAN,
    {\tt rf-CapabilityComp}
                                           RF-CapabilityComp
}
UE-RadioAccessCapabilityComp-ext ::= SEQUENCE {
   rf-CapabilityFDDComp
                                     RF-CapabBandListFDDComp-ext
UE-RadioAccessCapabilityComp-TDD128-v7f0ext ::= SEQUENCE {
   hSDSCH-physical-layer-category
                                           HSDSCH-physical-layer-category
                                                                                      OPTIONAL.
    multiCarrier-physical-layer-category
```

```
MultiCarrier-HSDSCH-physical-layer-category
                                                                                           OPTIONAL.
    tdd-edch-PhysicalLayerCategory
                                             INTEGER (1..6)
                                                                                           OPTIONAL,
    dl-CapabilityWithSimultaneousHS-DSCHConfig
                                             DL-CapabilityWithSimultaneousHS-DSCHConfig OPTIONAL,
                                                 ENUMERATED { true }
    supportForCSVoiceoverHSPA
                                                                                           OPTIONAL,
    totalRLC-AM-BufferSize
                                                 TotalRLC-AM-BufferSize-r5-ext
                                                                                           OPTIONAL
}
UE-RadioAccessCapabilityComp-v770ext ::= SEQUENCE {
    rf-CapabilityComp
                                             RF-CapabilityComp-v770ext,
    securityCapabilityIndication
                                             ENUMERATED { true }
                                                                                      OPTIONAL,
                                             ENUMERATED { true }
ENUMERATED { true }
    ganssSupportIndication
                                                                                      OPTIONAL,
    mac-ehsSupport
                                                                                      OPTIONAL
}
                                        SEQUENCE {
UE-RadioAccessCapabilityComp2 ::=
                                           SEQUENCE {
    fddPhysicalChannelCapab-hspdsch-edch
        dl-CapabilityWithSimultaneousHS-DSCHConfig
                                       DL-CapabilityWithSimultaneousHS-DSCHConfig OPTIONAL,
        physicalChannelCapabComp-hspdsch-r6
                                                 HSDSCH-physical-layer-category,
        physicalChannelCapability-edch-r6
                                                 PhysicalChannelCapability-edch-r6
            OPTIONAL
}
UE-RadioAccessCapabilityComp2-v770ext ::= SEQUENCE {
    hsdsch-physical-layer-category-ext edch-PhysicalLayerCategory-extension HSDSCH-physical-layer-category-ext INTEGER (7)
                                                                                       OPTIONAL,
                                                                                       OPTIONAL,
    hsscchlessHsdschOperation
                                             ENUMERATED {
                                                                                       OPTIONAL,
    enhancedFdpch
                                            ENUMERATED { true
                                                                                       OPTIONAL,
                                             ENUMERATED { true
    hsdschReception-CellFach
                                                                                       OPTIONAL.
    hsdschReception-CellUraPch
                                             ENUMERATED { true
                                                                                       OPTIONAL.
    discontinuousDpcchTransmission
                                             ENUMERATED { true }
                                                                                       OPTIONAL,
    slotFormat4
                                             ENUMERATED { true }
                                                                                       OPTIONAL,
    pdcp-Capability
                                             PDCP-Capability-v770ext
                                                                                      OPTIONAL
}
UE-RadioAccessCapabilityComp2-v7f0ext ::= SEQUENCE {
    supportofTxDivOnNonMIMOChannel
                                        ENUMERATED { true }
                                                                                      OPTIONAL
RF-CapabilityComp ::= SEQUENCE {
                            CHOICE {
    fdd
                                         NULL.
        notSupported
        supported
                                         RF-CapabBandListFDDComp
    tdd384-RF-Capability
                            CHOICE {
       notSupported
                                         NULL.
        supported
                                         RadioFrequencyBandTDDList
    tdd128-RF-Capability CHOICE {
        notSupported
                                         NULL.
                                         RadioFrequencyBandTDDList
        supported
    apabilityComp-v770ext ::= SEQUENCE {
-- If support of TDD384 and/or TDD128 RF capability is indicated in IEs 'RF-CapabilityComp',
RF-CapabilityComp-v770ext ::=
    -- the corresponding IE 'RadioFrequencyBandTDDList-r7' shall be included in this IE.
                                         RadioFrequencyBandTDDList-r7
    tdd384-RF-Capability
    tdd768-RF-Capability
                                         CHOICE {
        notSupported
                                             NULL
        supported
                                             RadioFrequencyBandTDDList-r7
    tdd128-RF-Capability
                                         RadioFrequencyBandTDDList-r7
                                                                                  OPTIONAL
}
-- NOTE: This IE defines the supported TX/RX frequency separation for the respective supported
-- frequency band. Values defined as spare shall not be sent in this version of the protocol.
-- If a spare value is received, it should be interpreted as 'default-RxTX-sparation'.
                                    ENUMERATED { notSupported,
RF-CapabBandFDDComp ::=
                                         default-TxRx-separation, spare2, spare1 }
RF-CapabBandListFDDComp ::=
                                    SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    -- The first entry corresponds with the first value of IE RadioFrequencyBandFDD,
    -- fdd2100, and so on. No more than seven entries should be included in this IE. The
    -- 8'th entry, if present, shall be ignored.
    -- An extension of this IE may be provided using the IE 'RF-CapabBandListFDDComp-ext'.
    RF-CapabBandFDDComp
```

```
RF-CapabBandListFDDComp-ext ::= SEQUENCE (SIZE (1..maxFreqBandsFDD-ext)) OF
    -- The first entry corresponds with the first value of IE RadioFrequencyBandFDD2,
    -- bandVIII, and so on.
    RF-CapabBandFDDComp
UE-RadioAccessCapability-v590ext ::= SEQUENCE {
    dl-CapabilityWithSimultaneousHS-DSCHConfig DL-CapabilityWithSimultaneousHS-DSCHConfig
    OPTIONAL,
    pdcp-Capability-r5-ext
                                        PDCP-Capability-r5-ext,
    rlc-Capability-r5-ext
                                       RLC-Capability-r5-ext,
    physicalChannelCapability
                                       PhysicalChannelCapability-hspdsch-r5,
    multiModeRAT-Capability-v590ext MultiModeRAT-Capability-v590ext
}
UE-RadioAccessCapability-v5c0ext ::= SEQUENCE {
   pdcp-Capability-r5-ext2
                                       PDCP-Capability-r5-ext2
UE-RadioAccessCapability-v680ext ::= SEQUENCE {
   multiModeRAT-Capability-v680ext MultiModeRAT-Capability-v680ext
   PhysChCapabilityFDD ::= SEQUENCE {
maxNoDPDCH-BitsTransmitted MaxNoDPDCH-BitsTransmitted,
UL-PhysChCapabilityFDD ::=
    -- dummy is not used in this version of the specification and
    -- it should be ignored by the receiver.
}
                                       SEQUENCE {
UL-PhysChCapabilityFDD-r6 ::=
    maxNoDPDCH-BitsTransmitted
                                       MaxNoDPDCH-BitsTransmitted,
    physicalchannelcapability-edch
                                           PhysicalChannelCapability-edch-r6
}
UL-PhysChCapabilityFDD-v770ext ::=
                                       SEQUENCE {
    edch-PhysicalLayerCategory-extension INTEGER (7)
                                                                                OPTIONAL,
                                           ENUMERATED { true }
ENUMERATED { true }
    discontinuousDpcchTransmission
                                                                               OPTIONAL,
    slotFormat4
                                                                                OPTIONAL
}
UL-PhysChCapabilityTDD ::=
                                   SEQUENCE {
                                      MaxTS-PerFrame,
    maxTS-PerFrame
    maxPhysChPerTimeslot
                                       MaxPhysChPerTimeslot,
    minimumSF
                                        MinimumSF-UL,
    supportOfPUSCH
UL-PhysChCapabilityTDD-384-v770ext ::= SEQUENCE {
    tdd384-edch
                                           CHOICE {
       supported
                                               SEQUENCE {
            tdd-edch-PhysicalLayerCategory
                                                   INTEGER (1..16)
                                                NULL
       unsupported
    }
}
UL-PhysChCapabilityTDD-LCR-r4 ::= SEQUENCE {
    maxTS-PerSubFrame
                                       MaxTS-PerSubFrame-r4,
                                       MaxPhysChPerTimeslot,
   maxPhysChPerTimeslot
                                        MinimumSF-UL,
    minimumSF
    supportOfPUSCH
                                       BOOLEAN,
                                       BOOLEAN
    supportOf8PSK
UL-PhysChCapabilityTDD-128-v770ext ::= SEQUENCE {
    maxPhysChPerTimeslot
                                           MaxPhysChPerTimeslot-LCR-r7,
    tdd128-edch
                                            CHOICE {
        supported
                                               SEQUENCE {
                                                   INTEGER (1..6)
            tdd-edch-PhysicalLayerCategory
        unsupported
                                                NULL
}
UL-PhysChCapabilityInfoTDD-128-v770ext ::= SEQUENCE {
   maxPhysChPerTimeslot
                                          MaxPhysChPerTimeslot-LCR-r7
```

```
UL-PhysChCapabilityTDD-768 ::=
                                        SEQUENCE {
   maxTS-PerFrame
                                            MaxTS-PerFrame,
   maxPhysChPerTimeslot
                                            MaxPhysChPerTimeslot,
   minimumSF
                                            MinimumSF-UL,
    supportOfPUSCH
                                            BOOLEAN,
    tdd384-edch
                                            CHOICE {
                                                SEQUENCE {
        supported
            tdd-edch-PhysicalLayerCategory
                                                    INTEGER (1..16)
        unsupported
}
PhysicalChannelCapability-edch-r6 ::= SEQUENCE {
                                           CHOICE {
   fdd-edch
        supported
                                                SEQUENCE {
                                                    INTEGER (1..16)
            edch-PhysicalLayerCategory
                                                NULL
        unsupported
    }
}
UL-TransChCapability ::=
                                   SEQUENCE {
                                    MaxNoBits,
   maxNoBitsTransmitted
   {\tt maxConvCodeBitsTransmitted}
                                       MaxNoBits,
                                      TurboSupport,
MaxSimultaneousTransChsUL,
    turboEncodingSupport
    maxSimultaneousTransChs
   modeSpecificInfo
                                        CHOICE {
        fdd
                                            NULL,
        tdd
                                            SEQUENCE {
            maxSimultaneousCCTrCH-Count
                                                MaxSimultaneousCCTrCH-Count
    maxTransmittedBlocks
                                        MaxTransportBlocksUL,
    maxNumberOfTFC
                                        MaxNumberOfTFC-UL,
   maxNumberOfTF
                                        MaxNumberOfTF
}
                                    SEQUENCE {
UE-Positioning-Capability ::=
                                    BOOLEAN,
    standaloneLocMethodsSupported
    ue-BasedOTDOA-Supported
                                            BOOLEAN.
    networkAssistedGPS-Supported
                                            NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames
                                            BOOLEAN,
    supportForIPDL
                                            BOOLEAN
}
                                    SEQUENCE {
UE-SecurityInformation ::=
    start-CS
                                       START-Value
}
                                    SEQUENCE {
UE-SecurityInformation2 ::=
    start-PS
                                        START-Value
UE-SpecificCapabilityInformation-LCRTDD ::= ENUMERATED {
                                                nF,
                                                nFMc-TriRx-UniTx,
                                                nFMc-TriRx-TriTx,
                                                nFMc-HexRx-UniTx,
                                                nFMc-HexRx-TriTx,
                                                nFMc-HexRx-HexTx,
                                                spare10,
                                                spare9,
                                                spare8,
                                                spare7,
                                                spare6,
                                                spare5,
                                                spare4,
                                                spare3,
                                                spare2,
                                                spare1 }
URA-UpdateCause ::=
                                    ENUMERATED {
                                        changeOfURA,
                                        periodicURAUpdate,
                                        dummy,
                                        spare1 }
```

```
UTRAN-DRX-CycleLengthCoefficient ::= INTEGER (3..9)
UTRAN-DRX-CycleLengthCoefficient-r7 ::= SEQUENCE {
   drx-CycleLengthCoefficient INTEGER (3..9), drx-CycleLengthCoefficient2 INTEGER (3..9)
                                                                          OPTIONAL,
   timeForDRXCycle2
                                      T-319
                                                                          OPTIONAL
}
WaitTime ::=
                                  INTEGER (0..15)
       irectionInfo ::=
  supportEUTRA-FDD
                                      SEQUENCE {
Pre-RedirectionInfo ::=
                                          BOOLEAN,
       supportEUTRA-TDD
                                           BOOLEAN
}
__ ***************
      RADIO BEARER INFORMATION ELEMENTS (10.3.4)
__ ***************
AlgorithmSpecificInfo ::=
                                  CHOICE {
   rfc2507-Info
                                     RFC2507-Info
}
AlgorithmSpecificInfo-r4 ::= CHOICE {
    rfc2507-Info RFC25
                                  RFC2507-Info,
RFC3095-Info-r4
   rfc3095-Info
}
CID-InclusionInfo-r4 ::=
                                 ENUMERATED {
                                   pdcp-Header,
                                       rfc3095-PacketFormat }
  logicalChannelIdentity Logica mac-ehs-QueueId
CommonRBMappingInfo ::=
                                  LogicalChannelIdentity,
                                      MAC-ehs-QueueId
 - Upper limit of COUNT-C is 2^32 - 1
COUNT-C ::=
                                   INTEGER (0..4294967295)
-- Upper limit of COUNT-C-MSB is 2^25 - 1
COUNT-C-MSB ::=
                                   INTEGER (0..33554431)
CS-HSPA-Information ::=
                                   SEQUENCE {
                                   UL-AMR-Rate
   ul-AMR-Rate
                                                        OPTIONAL,
   maxCS-Delay
                                       MaxCS-Delay
}
DefaultConfigIdentity ::=
                                  INTEGER (0..10)
DefaultConfigIdentity-r4 ::=
                                  INTEGER (0..12)
DefaultConfigIdentity-r5 ::=
                                  INTEGER (0..13)
-- DefaultConfigIdentity-r6 values 23..31 are spare and shall not be used in this version of
-- the protocol
                                   INTEGER (0..31)
DefaultConfigIdentity-r6 ::=
DefaultConfigMode ::=
                                   ENUMERATED {
                                       tdd }
DDI ::=
                                   INTEGER (0..62)
DL-AM-RLC-Mode ::=
                                   SEQUENCE {
                                      BOOLEAN,
   inSequenceDelivery
    receivingWindowSize
                                       ReceivingWindowSize,
   dl-RLC-StatusInfo
                                      DL-RLC-StatusInfo
}
                                    SEQUENCE {
DL-AM-RLC-Mode-r5 ::=
   dl-RLC-PDU-size
                                      OctetModeRLC-SizeInfoType1,
                                BOOLEAN,
ReceivingWindowSize,
DL-RLC-StatusInfo
   inSequenceDelivery
    receivingWindowSize
    dl-RLC-StatusInfo
```

```
}
DL-AM-RLC-Mode-r7 ::= SEQUENCE {
    dl-RLC-PDU-size CHOICE
    fixedSize Oct
                                     CHOICE {
        fixedSize
                                             OctetModeRLC-SizeInfoType1,
        flexibleSize
                                              ENUMERATED { size7, size15 }
    inSequenceDelivery BOOLEAN,
receivingWindowSize ReceivingWindowSize,
    dl-RLC-StatusInfo
                                         DL-RLC-StatusInfo
}
DL-CounterSynchronisationInfo ::= SEQUENCE {
   rB-WithPDCP-InfoList
                                           RB-WithPDCP-InfoList OPTIONAL
}
{\tt DL-CounterSynchronisationInfo-r5} \ ::= \ \ {\tt SEQUENCE} \ \big\{
   rb-WithPDCP-InfoList RB-WithPDCP-InfoList OPTIONAL, rb-PDCPContextRelocationList RB-PDCPContextRelocationList OPTIONAL
}
DL-LogicalChannelMapping ::= SEQUENCE {
     -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType DL-TransportChannelType, logicalChannelIdentity LogicalChannelIdentity
                                                                              OPTIONAL
}
DL-LogicalChannelMapping-r5 ::= SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType DL-TransportChannelType-r5, logicalChannelIdentity LogicalChannelIdentity
                                                                              OPTIONAL
DL-LogicalChannelMapping-r7 ::= SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType DL-TransportChannelType-r7, logicalChannelIdentity LogicalChannelIdentity
}
DL-LogicalChannelMappingList ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
                                         DL-LogicalChannelMapping
DL-LogicalChannelMappingList-r5 ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
                                         DL-LogicalChannelMapping-r5
DL-LogicalChannelMappingList-r7 ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
                                         DL-LogicalChannelMapping-r7
DL-Reception-Window-Size-r6 ::= ENUMERATED { size32, size48, size64, size80, size96, size112 }
                                    SEQUENCE {
DL-RFC3095-r4 ::=
    -- dummy is not used in this version of the specification and shall be ignored by the receiver.
                       CID-InclusionInfo-r4,
                                         INTEGER (1..16383)
                                                                               DEFAULT 15,
    max-CID
                                        INTEGER (0..65535)
                                                                              DEFAULT 0
    reverseDecompressionDepth
}
DL-RLC-Mode ::=
                                    CHOICE {
    dl-AM-RLC-Mode
                                       DL-AM-RLC-Mode,
    dl-UM-RLC-Mode
                                         NULTIT.
    dl-TM-RLC-Mode
                                         DL-TM-RLC-Mode
DL-RLC-Mode-r5 ::=
                                      CHOICE {
   dl-AM-RLC-Mode
                                        DL-AM-RLC-Mode-r5,
    dl-UM-RLC-Mode
                                         DL-UM-RLC-Mode-r5,
    dl-TM-RLC-Mode
                                         DL-TM-RLC-Mode
}
DL-RLC-Mode-r6 ::=
                                     CHOICE {
    dl-AM-RLC-Mode
                                        DL-AM-RLC-Mode-r5,
    dl-UM-RLC-Mode
                                          DL-UM-RLC-Mode-r6,
    dl-TM-RLC-Mode
                                         DL-TM-RLC-Mode
}
DL-RLC-Mode-r7 ::=
                                     CHOICE {
    dl-AM-RLC-Mode
                                         DL-AM-RLC-Mode-r7,
    dl-UM-RLC-Mode
                                          DL-UM-RLC-Mode-r6,
```

```
dl-TM-RLC-Mode
                                      DL-TM-RLC-Mode
}
DL-RLC-StatusInfo ::=
                                   SEQUENCE {
   timerStatusProhibit
                                       TimerStatusProhibit
                                                                           OPTIONAL.
    -- dummy is not used in this version of the specification, it should not be sent
    -- and if received they should be ignored.
                                                                       OPTIONAL,
   dummy
                                   TimerEPC
   missingPDU-Indicator
                                           BOOLEAN,
    timerStatusPeriodic
                                       TimerStatusPeriodic
                                                                           OPTIONAL
}
DL-TM-RLC-Mode ::=
                                   SEQUENCE {
   segmentationIndication
                                           BOOLEAN
DL-TransportChannelType ::=
                                   CHOICE {
   dch
                                       TransportChannelIdentity,
                                       NULL,
   -- The choice "dsch" should not be used in FDD mode, and if received
   -- the UE behaviour is unspecified.
                                       TransportChannelIdentity,
    -- The choice "dch-and-dsch" should not be used in FDD mode, and if received the UE
    -- behaviour is unspecified
   dch-and-dsch
                                       TransportChannelIdentityDCHandDSCH
}
DL-TransportChannelType-r5 ::=
                                       CHOICE {
                                       TransportChannelIdentity,
                                       NULL,
    -- The choice "dsch" should not be used in FDD mode, and if received
    -- the UE behaviour is unspecified.
                                        TransportChannelIdentity,
   -- The choice "dch-and-dsch" should not be used in FDD mode, and if received the UE
    -- behaviour is unspecified
   dch-and-dsch
                                       TransportChannelIdentityDCHandDSCH,
   hsdsch
                                       MAC-d-FlowIdentity,
    dch-and-hsdsch
                                       MAC-d-FlowIdentityDCHandHSDSCH
}
DL-TransportChannelType-r7 ::=
                                   CHOICE {
                                       TransportChannelIdentity,
    fach
                                       NULL,
    -- The choice "dsch" should not be used in FDD mode, and if received
    -- the UE behaviour is unspecified.
                                       TransportChannelIdentity,
    -- The choice "dch-and-dsch" should not be used in FDD mode, and if received the UE
    -- behaviour is unspecified
    dch-and-dsch
                                        TransportChannelIdentityDCHandDSCH,
   hsdsch
                                        CHOICE {
       mac-hs
                                           MAC-d-FlowIdentity,
                                           MAC-ehs-QueueId
       mac-ehs
    dch-and-hsdsch
      mac-hs
                                           MAC-d-FlowIdentityDCHandHSDSCH,
                                           MAC-ehs-QueueIdDCHandHSDSCH
       mac-ehs
}
DI-UM-RIC-LI-size ::=
                                       ENUMERATED {
                                       size7, size15 }
DL-UM-RLC-Mode-r5 ::=
                                       SEQUENCE {
   dl-UM-RLC-LI-size
                                       DL-UM-RLC-LI-size
DL-UM-RLC-Mode-r6 ::=
                                   SEQUENCE {
   dl-UM-RLC-LI-size
                                      DL-UM-RLC-LI-size,
   dl-Reception-Window-Size
                                       DL-Reception-Window-Size-r6 OPTIONAL
}
ExpectReordering ::=
                                   ENUMERATED {
                                      reorderingNotExpected,
                                       reorderingExpected }
ExplicitDiscard ::=
                                   SEQUENCE {
   timerMRW
                                       TimerMRW,
    timerDiscard
                                       TimerDiscard,
```

```
maxMRW
                                       MaxMRW
}
HeaderCompressionInfo ::=
                                  SEQUENCE {
    algorithmSpecificInfo
                                      AlgorithmSpecificInfo
\label{eq:compression} \mbox{HeaderCompressionInfoList} ::= \qquad \qquad \mbox{SEQUENCE (SIZE (1..maxPDCPAlgoType)) OF}
                                       HeaderCompressionInfo
HeaderCompressionInfo-r4 ::= SEQUENCE {
                                      AlgorithmSpecificInfo-r4
    algorithmSpecificInfo
HeaderCompressionInfoList-r4 ::= SEQUENCE (SIZE (1..maxPDCPAlgoType)) OF
                                       HeaderCompressionInfo-r4
LogicalChannelIdentity ::=
                                    INTEGER (1..15)
LosslessSRNS-RelocSupport ::=
                                    CHOICE {
                                       MaxPDCP-SN-WindowSize,
   supported
   notSupported
                                        NULL
MAC-d-HFN-initial-value ::=
                                   BIT STRING (SIZE (24))
MAC-LogicalChannelPriority ::=
                                   INTEGER (1..8)
MaxCS-Delay ::=
                                    INTEGER (0..18)
MaxDAT ::=
                                    ENUMERATED {
                                        dat1, dat2, dat3, dat4, dat5, dat6,
                                        dat7, dat8, dat9, dat10, dat15, dat20,
                                        dat25, dat30, dat35, dat40 }
MaxDAT-Retransmissions ::=
                                    SEQUENCE {
   maxDAT
                                       MaxDAT,
    timerMRW
                                        TimerMRW,
   maxMRW
                                        MaxMRW
MaxMRW ::=
                                    ENUMERATED {
                                       mm1, mm4, mm6, mm8, mm12, mm16,
                                        mm24, mm32 }
MaxPDCP-SN-WindowSize ::=
                                    ENUMERATED {
                                       sn255, sn65535 }
MaxRST ::=
                                    ENUMERATED {
                                       rst1, rst4, rst6, rst8, rst12,
                                        rst16, rst24, rst32 }
NoExplicitDiscard ::=
                                    ENUMERATED {
                                        dt10, dt20, dt30, dt40, dt50,
                                        dt60, dt70, dt80, dt90, dt100 }
                                SEQUENCE {
Lossle
PDCP-Info ::=
   losslessSRNS-RelocSupport
                                       LosslessSRNS-RelocSupport
    -- TABULAR: pdcp-PDU-Header is MD in the tabular format and it can be encoded
    -- in one bit, so the OPTIONAL is removed for compactness.
    pdcp-PDU-Header
                                       PDCP-PDU-Header,
    headerCompressionInfoList
                                       HeaderCompressionInfoList
                                                                           OPTIONAL
}
   SEQUENCE {
losslessSRNS-RelocSupport
TARITIAR. -2
PDCP-Info-r4 ::=
                                      LosslessSRNS-RelocSupport
    -- TABULAR: pdcp-PDU-Header is MD in the tabular format and it can be encoded
    -- in one bit, so the OPTIONAL is removed for compactness.
    pdcp-PDU-Header
                                        PDCP-PDU-Header,
                                       HeaderCompressionInfoList-r4 OPTIONAL
    headerCompressionInfoList
}
PDCP-InfoReconfig ::=
                                    SEQUENCE {
    pdcp-Info
                                       PDCP-Info,
    -- dummy is not used in this version of the specification and
    -- it should be ignored.
    dummy
                                       INTEGER (0..65535)
```

```
PDCP-InfoReconfig-r4 ::= SEQUENCE {
                                        PDCP-Info-r4
   pdcp-Info
                                    ENUMERATED {
PDCP-PDU-Header ::=
                                       present, absent }
                                 ENUMERATED { o-Mode, r-Mode }
PDCP-ROHC-TargetMode ::=
PDCP-SN-Info ::=
                                   INTEGER (0..65535)
Poll-PDU ··=
                                    ENUMERATED {
                                        pdu1, pdu2, pdu4, pdu8, pdu16,
                                        pdu32, pdu64, pdu128 }
Poll-SDU ::=
                                    ENUMERATED {
                                        sdu1, sdu4, sdu16, sdu64 }
PollingInfo ::=
                                    SEQUENCE {
    timerPollProhibit
                                     TimerPollProhibit
                                                                            OPTIONAL.
    timerPoll
                                        TimerPoll
                                                                            OPTIONAL,
   poll-PDU
                                        Poll-PDU
                                                                             OPTIONAL,
   poll-SDU
                                        Poll-SDU
                                                                            OPTIONAL,
   lastTransmissionPDU-Poll BOOLEAN, lastRetransmissionPDU-Poll BOOLEAN, pollWindow PollWindow
   pollWindow
                                                                           OPTIONAL,
    timerPollPeriodic
                                        TimerPollPeriodic
                                                                            OPTIONAL
}
PollWindow ::=
                                    ENUMERATED {
                                        pw50, pw60, pw70, pw80, pw85,
                                        pw90, pw95, pw99 }
PredefinedConfigIdentity ::=
                                   INTEGER (0..15)
PredefinedConfigValueTag ::=
                                   INTEGER (0..15)
PredefinedRB-Configuration ::= SEQUENCE {
    re-EstablishmentTimer Re-Esta
    srb-InformationList SRB-Inf
                                   Re-EstablishmentTimer,
    srb-InformationList
                                        SRB-InformationSetupList,
   rb-InformationList
                                        RB-InformationSetupList
}
PreDefRadioConfiguration ::= SEQUENCE {
    -- Radio bearer IEs
       predefinedRB-Configuration
                                          PredefinedRB-Configuration,
    -- Transport channel IEs
       preDefTransChConfiguration
                                        PreDefTransChConfiguration,
    -- Physical channel IEs
      preDefPhyChConfiguration
                                          PreDefPhyChConfiguration
}
PreDefRadioConfiguration-v770ext ::= SEQUENCE {
   -- Physical channel IEs
       preDefPhyChConfiguration
                                          PreDefPhyChConfiguration-v770ext
PredefinedConfigStatusList ::= SEQUENCE (SIZE (maxrreuerce PredefinedConfigStatusInfo
                                            SEQUENCE (SIZE (maxPredefConfig)) OF
PredefinedConfigStatusInfo ::= CHOICE {
   storedWithValueTagSameAsPrevius NULL,
                                        CHOICE {
       notStored
                                          NULL
       storedWithDifferentValueTag
                                          PredefinedConfigValueTag
}
{\tt PredefinedConfigStatusListComp} \ ::= \ {\tt SEQUENCE} \ \big\{
   setsWithDifferentValueTag PredefinedConfigSetsWithDifferentValueTag,
   otherEntries
                                        PredefinedConfigStatusListVarSz
                                                                                     OPTIONAL
}
PredefinedConfigSetsWithDifferentValueTag ::= SEQUENCE (SIZE (1..2)) OF
                                                PredefinedConfigSetWithDifferentValueTag
PredefinedConfigSetWithDifferentValueTag ::= SEQUENCE {
```

```
startPosition
                                              INTEGER (0..10)
                                                                DEFAULT 0,
   -- numberOfEntries
                                              INTEGER (6..16),
   -- numberOfEntries is covered by the size of the list in IE PredefinedConfigValueTagList
                                              {\tt PredefinedConfigValueTagList}
   valueTaqList
PredefinedConfigValueTagList ::= SEQUENCE (SIZE (1..maxPredefConfig)) OF
                                          PredefinedConfigValueTag
PredefinedConfigStatusListVarSz ::=
                                      SEQUENCE (SIZE (1..maxPredefConfig)) OF
                                          PredefinedConfigStatusInfo
RAB-Info ::=
                                   SEQUENCE {
   rab-Identity
                                    RAB-Identity,
                                      CN-DomainIdentity,
   cn-DomainIdentity
   nas-Synchronisation-Indicator
                                      NAS-Synchronisation-Indicator OPTIONAL,
   re-EstablishmentTimer
                                      Re-EstablishmentTimer
}
                                  SEQUENCE {
RAB-Info-r6-ext ::=
   mbms-SessionIdentity
                                     MBMS-SessionIdentity
                                                                        OPTIONAL
                                  SEQUENCE {
RAB-Info-v6b0ext ::=
                                      OCTET STRING (SIZE (3))
   mbms-ServiceIdentity
RAB-Info-r6 ::=
                                   SEQUENCE {
                                      RAB-Identity,
   rab-Identity
   mbms-SessionIdentity
                                      MBMS-SessionIdentity
                                                                         OPTIONAL,
   cn-DomainIdentity
                                      CN-DomainIdentity,
   nas-Synchronisation-Indicator
                                      NAS-Synchronisation-Indicator
                                                                        OPTIONAL,
                                      Re-EstablishmentTimer
   re-EstablishmentTimer
}
RAB-Info-r7 ::=
                                   SEQUENCE {
   rab-Identity
                                      RAB-Identity,
   mbms-SessionIdentity
                                      MBMS-SessionIdentity
                                                                         OPTIONAL.
                                      OCTET STRING (SIZE (3))
   mbms-ServiceIdentity
                                                                         OPTIONAL,
   cn-DomainIdentity
                                      CN-DomainIdentity,
   nas-Synchronisation-Indicator
                                      NAS-Synchronisation-Indicator
                                                                        OPTIONAL.
   re-EstablishmentTimer
                                      Re-EstablishmentTimer
RAB-InformationList ::=
                                 SEQUENCE (SIZE (1..maxRABsetup)) OF
                                      RAB-Info
RAB-InformationList-r6 ::=
                                   SEQUENCE (SIZE (1..maxRABsetup)) OF
                                      RAB-Info-r6
                                   SEQUENCE (SIZE (1.. maxRABsetup)) OF
RAB-InformationReconfigList ::=
                                      RAB-InformationReconfig
RAB-InformationReconfig ::=
                                   SEQUENCE {
   rab-Identity
                                      RAB-Identity,
   cn-DomainIdentity
                                       CN-DomainIdentity,
   nas-Synchronisation-Indicator
                                      NAS-Synchronisation-Indicator
}
RAB-Info-Post ::=
                                      SEQUENCE {
   rab-Identity
                                      RAB-Identity,
                                      CN-DomainIdentity,
   cn-DomainIdentity
   nas-Synchronisation-Indicator
                                      NAS-Synchronisation-Indicator OPTIONAL
}
RAB-InformationMBMSPtp ::=
                                  SEQUENCE {
   rb-Identity
                                    RB-Identity,
                                      OCTET STRING (SIZE (3)),
   mbms-ServiceIdentity
   mbms-SessionIdentity
                                      MBMS-SessionIdentity
                                                                        OPTIONAL
RAB-InformationMBMSPtpList ::=
                                 SEQUENCE (SIZE (1..maxMBMSservSelect)) OF
                                      RAB-InformationMBMSPtp
RAB-InformationSetup ::=
                                  SEQUENCE {
   rab-Info
                                      RAB-Info.
   rb-InformationSetupList
                                      RB-InformationSetupList
```

```
}
RAB-InformationSetup-r4 ::= SEQUENCE {
                                    RAB-Info,
   rab-Info
    rb-InformationSetupList
                                       RB-InformationSetupList-r4
RAB-InformationSetup-r5 ::= SEQUENCE {
   rab-Info
                                     RAB-Info,
   rb-InformationSetupList
                                       RB-InformationSetupList-r5
}
{\tt RAB-InformationSetup-r6-ext} \ ::= \ {\tt SEQUENCE} \ \big\{
   rab-Info-r6-ext
                                      RAB-Info-r6-ext
}
                                   SEQUENCE {
RAB-InformationSetup-r6 ::=
                                   RAB-Info-r6,
   rab-Info
   rb-InformationSetupList
                                       RB-InformationSetupList-r6
}
RAB-InformationSetup-v6b0ext ::= SEQUENCE {
   rab-Info-v6b0ext
                                    RAB-Info-v6b0ext OPTIONAL
RAB-InformationSetup-r7 ::=
                                   SEQUENCE {
                                      RAB-Info-r7,
   rab-Info
    rb-InformationSetupList
                                       RB-InformationSetupList-r7
}
{\tt RAB-InformationSetup-v820ext} \ ::= \ \ {\tt SEQUENCE} \ \big\{
                                      CS-HSPA-Information
   cs-HSPA-Information
{\tt RAB-InformationSetupList} \ ::= \\ {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxRABsetup}) \,) \ {\tt OF}
                                       RAB-InformationSetup
RAB-InformationSetupList-r4 ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
                                       RAB-InformationSetup-r4
RAB-InformationSetupList-r5 ::=
                                    SEQUENCE (SIZE (1..maxRABsetup)) OF
                                       RAB-InformationSetup-r5
{\tt RAB-InformationSetupList-r6} \ ::= \ \ {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxRABsetup}) \,) \ {\tt OF}
                                       RAB-InformationSetup-r6
-- The IE 'RAB-InformationSetupList-r6-ext' provides elements of extension information, which
-- are added to the corresponding elements of the IE 'RAB-InformationSetupList/-r4/-r5'.
RAB-InformationSetupList-r6-ext ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
                                       RAB-InformationSetup-r6-ext
RAB-InformationSetupList-v6b0ext ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
                                       RAB-InformationSetup-v6b0ext
RAB-InformationSetupList-r7 ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
                                        RAB-InformationSetup-r7
RAB-InformationSetupList-v820ext ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
                                       RAB-InformationSetup-v820ext
                                    SEQUENCE {
RB-ActivationTimeInfo ::=
    rb-Identity
                                       RB-Identity,
   rlc-SequenceNumber
                                        RLC-SequenceNumber
}
RB-ActivationTimeInfoList ::= SEQUENCE (SIZE (1..maxRB)) OF
                                       RB-ActivationTimeInfo
RB-COUNT-C-Information ::=
                                    SEQUENCE {
   rb-Identity
                                       RB-Identity,
    count-C-UL
                                        COUNT-C,
   count-C-DL
                                        COUNT-C
}
RB-COUNT-C-InformationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
                                       RB-COUNT-C-Information
RB-COUNT-C-MSB-Information ::=
                                   SEQUENCE {
```

```
rb-Identity
                                          RB-Identity,
    count-C-MSB-UL
                                           COUNT-C-MSB,
    count-C-MSB-DL
                                          COUNT-C-MSB
}
RB-COUNT-C-MSB-InformationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
                                          RB-COUNT-C-MSB-Information
RB-Identity ::=
                                      INTEGER (1..32)
RB-IdentityList ::=
                                      SEQUENCE (SIZE (1..maxRB)) OF
                                          RB-Identity
RB-InformationAffected ::=
                                      SEQUENCE {
    rb-Identity
                                          RB-Identity,
    rb-MappingInfo
                                           RB-MappingInfo
}
\label{eq:RB-InformationAffected-r5} \textbf{RB-InformationAffected-r5} ::= \\ \textbf{SEQUENCE} \; \big\{
    rb-Identity
                                           RB-Identity,
    rb-MappingInfo
                                           RB-MappingInfo-r5
}
RB-InformationAffected-r6 ::= SEQUENCE {
    rb-Identity
                                          RB-Identity,
    rb-MappingInfo
                                           RB-MappingInfo-r6
}
\label{eq:RB-InformationAffected-r7} \textbf{RB-InformationAffected-r7} ::= \\ \textbf{SEQUENCE} \ \{
    rb-Identity
                                          RB-Identity,
    rb-MappingInfo
                                           RB-MappingInfo-r7
RB-InformationAffectedList ::= SEQUENCE (SIZE (1..maxRB)) OF
                                          RB-InformationAffected
RB-InformationAffectedList-r5 ::= SEQUENCE (SIZE (1..maxRB)) OF
                                          RB-InformationAffected-r5
RB-InformationAffectedList-r6 ::=
                                      SEQUENCE (SIZE (1..maxRB)) OF
                                          RB-InformationAffected-r6
RB-InformationAffectedList-r7 ::=
                                      SEQUENCE (SIZE (1..maxRB)) OF
                                          RB-InformationAffected-r7
RB-InformationChanged-r6 ::=
                                      SEQUENCE {
   rb-Identity
                                          RB-Identity,
    rb-Change
                                           CHOICE {
        release
                                               NULL,
        re-mapToDefaultRb
                                               RB-Identity
}
\label{eq:RB-InformationChangedList-r6} \textbf{RB-InformationChangedList-r6} ::= \\ \textbf{SEQUENCE} \ (\texttt{SIZE} \ (\texttt{1..maxRB})) \ \texttt{OF}
                                               RB-InformationChanged-r6
                                     SEQUENCE {
RB-InformationReconfig ::=
   rb-Identity
                                         RB-Identity,
    pdcp-Info
                                           PDCP-InfoReconfig
                                                                                 OPTIONAL,
    pdcp-SN-Info
                                          PDCP-SN-Info
                                                                                 OPTIONAL.
    rlc-Info
                                          RLC-Info
                                                                                 OPTIONAL,
    rb-MappingInfo
                                           RB-MappingInfo
                                                                                 OPTIONAL,
    rb-StopContinue
                                          RB-StopContinue
                                                                                 OPTIONAL
}
RB-InformationReconfig-r4 ::= SEQUENCE {
    rb-Identity
                                          RB-Identity,
                                           PDCP-InfoReconfig-r4
                                                                                 OPTIONAL,
    pdcp-Info
    pdcp-SN-Info
                                          PDCP-SN-Info
                                                                                 OPTIONAL,
    rlc-Info
                                          RLC-Info
                                                                                 OPTIONAL,
    rb-MappingInfo
                                          RB-MappingInfo
                                                                                 OPTIONAL,
    rb-StopContinue
                                          RB-StopContinue
                                                                                 OPTIONAL
}
RB-InformationReconfig-r5 ::= SEQUENCE {
    rb-Identity
                                          RB-Identity,
                                           PDCP-InfoReconfig-r4
    pdcp-Info
                                                                                 OPTIONAL.
    pdcp-SN-Info
                                           PDCP-SN-Info
                                                                                  OPTIONAL,
```

```
rlc-Info
                                        RLC-Info-r5
                                                                             OPTIONAL,
    rb-MappingInfo
                                        RB-MappingInfo-r5
                                                                             OPTIONAL,
                                        RB-StopContinue
   rb-StopContinue
                                                                             OPTIONAL
}
RB-InformationReconfig-r6 ::= SEQUENCE {
                                        RB-Identity,
   rb-Identity
   pdcp-Info
                                        PDCP-InfoReconfig-r4
                                                                             OPTIONAL,
   pdcp-SN-Info
                                        PDCP-SN-Info
                                                                             OPTIONAL,
    rlc-Info
                                        RLC-Info-r6
                                                                             OPTIONAL,
   rb-MappingInfo
                                        RB-MappingInfo-r6
                                                                             OPTIONAL,
                                        RB-StopContinue
    rb-StopContinue
                                                                             OPTIONAL
}
\label{eq:RB-InformationReconfig-r7} \textbf{RB-InformationReconfig-r7} ::= \\ \textbf{SEQUENCE} \ \big\{
                                    RB-Identity,
   rb-Identity
                                                                            OPTIONAL,
                                        PDCP-InfoReconfig-r4
   pdcp-Info
   pdcp-SN-Info
                                        PDCP-SN-Info
                                                                             OPTIONAL,
   rlc-Info
                                                                            OPTIONAL,
                                        RLC-Info-r7
                                                                             OPTIONAL,
    rb-MappingInfo
                                        RB-MappingInfo-r7
                                        RB-StopContinue
    rb-StopContinue
                                                                             OPTIONAL
}
{\tt RB-InformationReconfigList} ::= \\ {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxRB})) \ {\tt OF} \\
                                        RB-InformationReconfig
RB-InformationReconfigList-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
                                        RB-InformationReconfig-r4
                                    SEQUENCE (SIZE (1..maxRB)) OF
RB-InformationReconfigList-r5 ::=
                                        RB-InformationReconfig-r5
RB-InformationReconfigList-r6 ::=
                                    SEQUENCE (SIZE (1..maxRB)) OF
                                        RB-InformationReconfig-r6
RB-InformationReconfigList-r7 ::=
                                    SEQUENCE (SIZE (1..maxRB)) OF
                                        RB-InformationReconfig-r7
                                    SEQUENCE (SIZE (1..maxRB)) OF
RB-InformationReleaseList ::=
                                       RB-Identity
RB-InformationSetup ::=
                                   SEQUENCE {
   rb-Identity
                                    RB-Identity,
    pdcp-Info
                                        PDCP-Info
                                                                             OPTIONAL,
   rlc-InfoChoice
                                        RLC-InfoChoice,
   rb-MappingInfo
                                        RB-MappingInfo
}
RB-InformationSetup-r4 ::= SEQUENCE {
                                    RB-Identity,
   rb-Identity
   pdcp-Info
                                        PDCP-Info-r4
                                                                             OPTIONAL,
                                        RLC-InfoChoice,
    rlc-InfoChoice
   rb-MappingInfo
                                        RB-MappingInfo
RB-InformationSetup-r5 ::=
                                  SEQUENCE {
    rb-Identity
                                        RB-Identity,
   pdcp-Info
                                        PDCP-Info-r4
                                                                             OPTIONAL,
    rlc-InfoChoice
                                        RLC-InfoChoice-r5,
   rb-MappingInfo
                                        RB-MappingInfo-r5
}
                                   SEQUENCE {
RB-InformationSetup-r6 ::=
   rb-Identity
                                        RB-Identity,
                                        PDCP-Info-r4
    pdcp-Info
                                                                             OPTIONAL.
    rlc-InfoChoice
                                        RLC-InfoChoice-r6,
                                        RB-MappingInfo-r6
    rb-MappingInfo
}
RB-InformationSetup-r7 ::= SEQUENCE \{
   rb-Identity
                                        RB-Identity,
   pdcp-Info
                                         PDCP-Info-r4
                                                                            OPTIONAL,
    rlc-InfoChoice
                                        RLC-InfoChoice-r7,
    rb-MappingInfo
                                        RB-MappingInfo-r7
}
{\tt RB-InformationSetupList} \ ::= \\ {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxRBperRAB})) \ {\tt OF} \\
                                        RB-InformationSetup
```

```
RB-InformationSetupList-r4 ::=
                                     SEQUENCE (SIZE (1..maxRBperRAB)) OF
                                           RB-InformationSetup-r4
RB-InformationSetupList-r5 ::=
                                       SEQUENCE (SIZE (1..maxRBperRAB)) OF
                                           RB-InformationSetup-r5
                                       SEQUENCE (SIZE (1..maxRBperRAB)) OF
RB-InformationSetupList-r6 ::=
                                            RB-InformationSetup-r6
RB-InformationSetupList-r7 ::=
                                       SEQUENCE (SIZE (1..maxRBperRAB)) OF
                                            RB-InformationSetup-r7
RB-MappingInfo ::=
                                       SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
                                           RB-MappingOption
                                       SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
RB-MappingInfo-r5 ::=
                                            RB-MappingOption-r5
RB-MappingInfo-r6 ::=
                                       SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
                                            RB-MappingOption-r6
RB-MappingInfo-r7 ::=
                                       SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
                                           RB-MappingOption-r7
                                       SEQUENCE {
RB-MappingOption ::=
                                       UL-LogicalChannelMappings
                                           UL-LogicalChannelMappings OPTIONAL, DL-LogicalChannelMappingList OPTIONAL
    ul-LogicalChannelMappings
    dl-LogicalChannelMappingList
}
RB-MappingOption-r5 ::=
                                           SEQUENCE {
    MappingOption-r5 ::=SEQUENCE {ul-LogicalChannelMappingsUL-LogicalChannelMappingsOPTIONAL,dl-LogicalChannelMappingListDL-LogicalChannelMappingList-r5OPTIONAL
}
RB-MappingOption-r6 ::=
                                           SEQUENCE {

      wappingOption-re ::=
      SEQUENCE {

      ul-LogicalChannelMappings
      UL-LogicalChannelMappings-r6

      dl-LogicalChannelMappingList
      DL-LogicalChannelMappingList-r5

                                                                                 OPTIONAL,
                                                                                   OPTIONAL
}
RB-MappingOption-r7 ::=
                                           SEQUENCE {
    ul-LogicalChannelMappings
    ul-LogicalChannelMappings
dl-LogicalChannelMappingList
                                           UL-LogicalChannelMappings-r6
                                                                                 OPTIONAL,
                                         DL-LogicalChannelMappingList-r7
                                                                                   OPTIONAL
}
RB-PDCPContextRelocation ::=
                                           SEQUENCE {
    rb-Identity
                                            RB-Identity,
    dl-RFC3095-Context-Relocation
                                                BOOLEAN.
    ul-RFC3095-Context-Relocation
                                                BOOLEAN
}
                                               SEQUENCE (SIZE (1..maxRBallRABs)) OF
RB-PDCPContextRelocationList ::=
                                                RB-PDCPContextRelocation
                                      ENUMERATED {
RB-StopContinue ::=
                                           stopRB, continueRB }
RB-WithPDCP-Info ::=
                                       SEQUENCE {
    rb-Identity
                                           RB-Identity,
    pdcp-SN-Info
                                            PDCP-SN-Info
                                       SEQUENCE (SIZE (1..maxRBallRABs)) OF
RB-WithPDCP-InfoList ::=
                                           RB-WithPDCP-Info
                                       ENUMERATED {
ReceivingWindowSize ::=
                                            rw1, rw8, rw16, rw32, rw64, rw128, rw256,
                                            rw512, rw768, rw1024, rw1536, rw2047,
                                            rw2560, rw3072, rw3584, rw4095 }
RFC2507-Info ::=
                                       SEQUENCE {
                                            INTEGER (1..65535)
    f-MAX-PERIOD
                                                                                   DEFAULT 256,
    f-MAX-TIME
                                            INTEGER (1..255)
                                                                                   DEFAULT 5,
                                                                                   DEFAULT 168,
    max-HEADER
                                            INTEGER (60..65535)
    tcp-SPACE
                                            INTEGER (3..255)
                                                                                   DEFAULT 15,
                                           INTEGER (3..65535)
    -- TABULAR: expectReordering has only two possible values, so using Optional or Default
    -- would be wasteful
```

```
expectReordering
                                      ExpectReordering
}
RFC3095-Info-r4 ::=
rohcProfileList
ul-RFC3095
                              SEQUENCE {
                               ROHC-ProfileList-r4,
                                                                       OPTIONAL,
                                       UL-RFC3095-r4
   dl-RFC3095
                                       DL-RFC3095-r4
                                                                           OPTIONAL
}
RLC-Info ::=
                                   SEQUENCE {
  ul-RLC-Mode
                                   UL-RLC-Mode
                                                                           OPTIONAL,
   dl-RLC-Mode
                                       DL-RLC-Mode
                                                                           OPTIONAL
}
RLC-Info-r5 ::=
                                   SEQUENCE {
                                   UL-RLC-Mode
  ul-RLC-Mode
                                                                           OPTIONAL,
   dl-RLC-Mode
                                       DL-RLC-Mode-r5
                                                                           OPTIONAL,
   rlc-OneSidedReEst
                                       BOOLEAN
}
RLC-Info-r6 ::=
                                  SEQUENCE {
                                     UL-RLC-Mode
   ul-RLC-Mode
                                                                           OPTIONAL,
                                       DL-RLC-Mode-r6
    dl-RLC-Mode
                                                                           OPTIONAL,
   rlc-OneSidedReEst
altE-bitInterpretation
                                      BOOLEAN,
                                      ENUMERATED { true }
                                                                          OPTIONAL
}
RLC-Info-r7 ::=
   C-Info-r7 ::=
ul-RLC-Mode
                                  SEQUENCE {
                                  UL-RLC-Mode
                                                                          OPTIONAL,
                                       DL-RLC-Mode-r7
   dl-RLC-Mode
   rlc-OneSidedReEst
                                                                          OPTIONAL,
   rlc-OneSidedReEst BOOLEAN,
altE-bitInterpretation ENUMERATED { true }
useSpecialValueOfHEField ENUMERATED { true }
                                                                          OPTIONAL,
                                                                          OPTIONAL
}
                         SEQUENCE {
RLC-Info-MCCH-r6 ::=
   dl-UM-RLC-OutOSeqDelivery-Info

DL-UM-RLC-LI-size,
UM-RLC-OutOSeqDelivery-Info
   dl-UM-RLC-LI-size
                                      UM-RLC-OutOSeqDelivery-Info-r6 OPTIONAL
}
RLC-Info-MSCH-r6 ::=
                                   SEQUENCE {
  dl-UM-RLC-LI-size
                                      DL-UM-RLC-LI-size
RLC-Info-MTCH-r6 ::= SEQUENCE {
    dl-UM-RLC-LI-size DL-UM-
   dl-UM-RLC-LI-size DL-UM-RLC-LI-size, dl-UM-RLC-DuplAvoid-Reord-Info UM-RLC-DuplAvoid-Reord-Info-r6
                                                                         OPTIONAL
}
RLC-InfoChoice ::=
                                    CHOICE {
   rlc-Info
                                     RLC-Info,
                                       RB-Identity
   same-as-RB
}
RLC-InfoChoice-r5 ::= CHOICE {
   rlc-Info
                                       RLC-Info-r5,
    same-as-RB
                                       RB-Identity
RLC-InfoChoice-r6 ::= CHOICE {
                                      RLC-Info-r6,
   rlc-Info
    same-as-RB
                                       RB-Identity
}
RLC-InfoChoice-r7 ::=
                                   CHOICE {
   rlc-Info
                                      RLC-Info-r7,
    same-as-RB
                                       RB-Identity
}
RLC-PDU-Size ::=
                                   OctetModeRLC-SizeInfoType1
RLC-PDU-SizeList ::=
                                    SEQUENCE (SIZE (1..maxRLCPDUsizePerLogChan)) OF
                                       RLC-PDU-Size
RLC-SequenceNumber ::=
                                   INTEGER (0..4095)
RLC-SizeInfo ::=
                                    SEQUENCE {
                                       INTEGER (1..maxTF)
   rlc-SizeIndex
```

```
}
RLC-SizeExplicitList ::= SEQUENCE (SIZE (1..maxTF)) OF
                                      RLC-SizeInfo
ROHC-Profile-r4 ::=
                                  INTEGER (1..3)
ROHC-ProfileList-r4 ::= SEQUENCE (SIZE (1..maxROHC-Profile-r4)) OF
                                      ROHC-Profile-r4
ROHC-PacketSize-r4 ::=
                                  INTEGER (2..1500)
\label{eq:control_robust_robust} \mbox{ROHC-PacketSizes-r4} ::= \qquad \qquad \mbox{SEQUENCE (SIZE (1..maxROHC-PacketSizes-r4))} \qquad \mbox{OF}
                                      ROHC-PacketSize-r4
SRB-InformationSetup ::=
                                  SEQUENCE {
   -- The default value for rb-Identity is the smallest value not used yet.
                                                                          OPTIONAL,
   rb-Identitv
                                       RB-Identity
                                      RLC-InfoChoice,
   rlc-InfoChoice
   rb-MappingInfo
                                      RB-MappingInfo
}
SRB-InformationSetup-r5 ::= SEQUENCE {
   -- The default value for rb-Identity is the smallest value not used yet.
                                      RB-Identity
   rb-Identity
                                                                          OPTIONAL.
   rlc-InfoChoice
                                       RLC-InfoChoice-r5,
   rb-MappingInfo
                                      RB-MappingInfo-r5
}
SRB-InformationSetup-r6 ::= SEQUENCE {
    -- The default value for rb-Identity is the smallest value not used yet.
                     RB-Identity
                                                                         OPTIONAL,
   rb-Identity
   rlc-InfoChoice
                                       RLC-InfoChoice-r6,
   rb-MappingInfo
                                      RB-MappingInfo-r6
}
SRB-InformationSetup-r7 ::= SEQUENCE {
  -- The default value for rb-Identity is the smallest value not used yet.
                                                                          OPTIONAL.
   rb-Identity
                                      RB-Identity
   rlc-InfoChoice
                                       RLC-InfoChoice-r7,
   rb-MappingInfo
                                       RB-MappingInfo-r7
}
SRB-InformationSetupList ::= SEQUENCE (SIZE (1..maxSRBsetup)) OF
                                     SRB-InformationSetup
SRB-InformationSetupList-r5 ::= SEQUENCE (SIZE (1..maxSRBsetup)) OF
                                      SRB-InformationSetup-r5
                                   SEQUENCE (SIZE (1..maxSRBsetup)) OF
SRB-InformationSetupList-r6 ::=
                                      SRB-InformationSetup-r6
SRB-InformationSetupList-r7 ::=
                                   SEQUENCE (SIZE (1..maxSRBsetup)) OF
                                      SRB-InformationSetup-r7
SRB-InformationSetupList2 ::=
                                   SEQUENCE (SIZE (3..4)) OF
                                      SRB-InformationSetup
                                   SEQUENCE (SIZE (3..4)) OF
SRB-InformationSetupList2-r6 ::=
                                      SRB-InformationSetup-r6
SRB-InformationSetupList2-r7 ::=
                                   SEQUENCE (SIZE (3..4)) OF
                                      SRB-InformationSetup-r7
TimerDAR-r6 ::=
                                   ENUMERATED {
                                       ms40, ms80, ms120, ms160, ms240, ms320, ms480, ms640,
                                       ms960, ms1280, ms1920, ms2560, ms3840, ms5120 }
                                   ENUMERATED {
TimerDiscard ::=
                                       td0-1, td0-25, td0-5, td0-75,
                                       td1, td1-25, td1-5, td1-75,
                                       td2, td2-5, td3, td3-5, td4, td4-5, td5, td7-5 }
TimerEPC ::=
                                   ENUMERATED {
                                       te50, te60, te70, te80, te90,
                                       te100, te120, te140, te160, te180,
                                       te200, te300, te400, te500, te700,
```

```
te900 }
TimerMRW ::=
                                      ENUMERATED {
                                          te50, te60, te70, te80, te90, te100,
                                          te120, te140, te160, te180, te200,
                                          te300, te400, te500, te700, te900 }
TimerOSD-r6 ::=
                                      ENUMERATED {
                                          ms40, ms80, ms120, ms160, ms240, ms320, ms480, ms640,
                                          ms960, ms1280, ms1920, ms2560, ms3840, ms5120 }
TimerPoll ::=
                                      ENUMERATED {
                                          tp10, tp20, tp30, tp40, tp50,
                                          tp60, tp70, tp80, tp90, tp100,
                                          tp110, tp120, tp130, tp140, tp150, tp160, tp170, tp180, tp190, tp200,
                                          tp210, tp220, tp230, tp240, tp250,
                                          tp260, tp270, tp280, tp290, tp300,
                                          tp310, tp320, tp330, tp340, tp350,
                                          tp360, tp370, tp380, tp390, tp400,
                                          tp410, tp420, tp430, tp440, tp450,
                                          tp460, tp470, tp480, tp490, tp500,
                                          tp510, tp520, tp530, tp540, tp550,
                                          tp600, tp650, tp700, tp750, tp800,
                                          tp850, tp900, tp950, tp1000 }
TimerPollPeriodic ::=
                                      ENUMERATED {
                                          tper100, tper200, tper300, tper400,
                                          tper500, tper750, tper1000, tper2000 }
TimerPollProhibit ::=
                                      ENUMERATED {
                                          tpp10, tpp20, tpp30, tpp40, tpp50,
                                          tpp60, tpp70, tpp80, tpp90, tpp100,
                                          tpp110, tpp120, tpp130, tpp140, tpp150,
                                          tpp160, tpp170, tpp180, tpp190, tpp200,
                                          tpp210, tpp220, tpp230, tpp240, tpp250,
                                          tpp260, tpp270, tpp280, tpp290, tpp300,
                                          tpp310, tpp320, tpp330, tpp340, tpp350, tpp360, tpp370, tpp380, tpp390, tpp400,
                                          tpp410, tpp420, tpp430, tpp440, tpp450,
                                          tpp460, tpp470, tpp480, tpp490, tpp500,
                                          tpp510, tpp520, tpp530, tpp540, tpp550,
                                          tpp600, tpp650, tpp700, tpp750, tpp800,
                                          tpp850, tpp900, tpp950, tpp1000
TimerRST ::=
                                      ENUMERATED {
                                          tr50, tr100, tr150, tr200, tr250, tr300,
                                          tr350, tr400, tr450, tr500, tr550, tr600, tr700, tr800, tr900, tr1000 }
                                      ENUMERATED {
TimerStatusPeriodic ::=
                                          tsp100, tsp200, tsp300, tsp400, tsp500,
                                          tsp750, tsp1000, tsp2000 }
TimerStatusProhibit ::=
                                      ENUMERATED {
                                          tsp10,tsp20,tsp30,tsp40,tsp50,
                                          tsp60,tsp70,tsp80,tsp90,tsp100,
                                          tsp110,tsp120,tsp130,tsp140,tsp150,
                                          tsp160,tsp170,tsp180,tsp190,tsp200,
                                          tsp210,tsp220,tsp230,tsp240,tsp250,
                                          tsp260,tsp270,tsp280,tsp290,tsp300,
                                          tsp310,tsp320,tsp330,tsp340,tsp350,
                                          tsp360,tsp370,tsp380,tsp390,tsp400,
                                          tsp410,tsp420,tsp430,tsp440,tsp450,
                                          tsp460,tsp470,tsp480,tsp490,tsp500,
                                          tsp510,tsp520,tsp530,tsp540,tsp550,
                                          tsp600,tsp650,tsp700,tsp750,tsp800,
                                          tsp850,tsp900,tsp950,tsp1000 }
{\tt TransmissionRLC-Discard} ::= {\tt CHOICE} \; \{
    timerBasedExplicit
                                         ExplicitDiscard,
    timerBasedNoExplicit
                                          NoExplicitDiscard,
    maxDAT-Retransmissions
                                         MaxDAT-Retransmissions,
                                          MaxDAT
   noDiscard
}
TransmissionWindowSize ::= ENUMERATED {
                                          tw1, tw8, tw16, tw32, tw64, tw128, tw256,
```

```
tw512, tw768, tw1024, tw1536, tw2047,
                                      tw2560, tw3072, tw3584, tw4095 }
                                  ENUMERATED {
UL-AMR-Rate ::=
                                      t0, t1, t2, t3, t4, t5, t6, t7, t8, spare7, spare6, spare5,
                                       spare4, spare3, spare2, spare1 }
UL-AM-RLC-Mode ::=
                                  SEQUENCE {
                                      TransmissionRLC-Discard,
   transmissionRLC-Discard
   transmissionWindowSize
                                      TransmissionWindowSize,
   timerRST
                                      TimerRST,
   max-RST
                                      MaxRST.
   pollingInfo
                                      PollingInfo
                                                                        \cap PTT \cap M\Delta T.
}
RB-WithPDCP-InfoList OPTIONAL,
   rB-WithPDCP-InfoList
   startList
                                          STARTList
UL-LogicalChannelMapping ::=
                                  SEQUENCE {
    -- TABULAR: UL-TransportChannelType contains TransportChannelIdentity as well.
   ul-TransportChannelType
                                      UL-TransportChannelType,
   logicalChannelIdentity
                                      LogicalChannelIdentity
   rlc-SizeList
                                      CHOICE {
       allSizes
                                          NULL,
       configured
                                          NULL,
       explicitList
                                          RLC-SizeExplicitList
   mac-LogicalChannelPriority
                                    MAC-LogicalChannelPriority
}
{\tt UL-LogicalChannelMapping-r6} ::= \\ {\tt SEQUENCE} \ \big\{
   ul-TrCH-Type
                                      CHOICE {
                                          SEQUENCE {
       dch-rach-usch
            -- TABULAR: UL-TransportChannelType contains TransportChannelIdentity as well.
           ul-TransportChannelType UL-TransportChannelType,
           logicalChannelIdentity
                                              LogicalChannelIdentity
                                                                                OPTIONAL,
                                              CHOICE {
           rlc-SizeList
              allSizes
                                                  NULL,
               configured
                                                  NULL,
                                                  RLC-SizeExplicitList
               explicitList
           }
                                         SEQUENCE {
                                          LogicalChannelIdentity,
           logicalChannelIdentity
           e-DCH-MAC-d-FlowIdentity
                                              E-DCH-MAC-d-FlowIdentity,
           ddi
                                             DDI,
           rlc-PDU-SizeList
                                              RLC-PDU-SizeList,
           includeInSchedulingInfo
                                             BOOLEAN
   mac-LogicalChannelPriority
                                    MAC-LogicalChannelPriority
{\tt UL-LogicalChannelMappingList} ::= \\ {\tt SEQUENCE} \ \{
   -- rlc-LogicalChannelMappingIndicator shall be set to TRUE in this version
    -- of the specification
   rlc-LogicalChannelMappingIndicator BOOLEAN,
                                      SEOUENCE (SIZE (maxLoCHperRLC)) OF
   ul-LogicalChannelMapping
                                      UL-LogicalChannelMapping
UL-LogicalChannelMappingList-r6 ::= SEQUENCE {
   -- rlc-LogicalChannelMappingIndicator shall be set to TRUE in this version
   -- of the specification
   rlc-LogicalChannelMappingIndicator BOOLEAN,
                                      SEQUENCE (SIZE (maxLoCHperRLC)) OF
   ul-LogicalChannelMapping
                                          UL-LogicalChannelMapping-r6
}
UL-LogicalChannelMappings ::= CHOICE {
   oneLogicalChannel
                                    UL-LogicalChannelMapping,
                                      UL-LogicalChannelMappingList
   twoLogicalChannels
UL-LogicalChannelMappings-r6 ::= CHOICE {
                                      UL-LogicalChannelMapping-r6,
   oneLogicalChannel
```

```
twoLogicalChannels
                                    UL-LogicalChannelMappingList-r6
}
                                 SEQUENCE {
UL-RFC3095-r4 ::=
    -- dummy1 is not used in this version of the specification and shall be ignored by the receiver.
                    CID-InclusionInfo-r4,
INTEGER (1..16383)
                                                                      DEFAULT 15,
   max-CID
   -- dummy is not used in this version of the specification and
    \mbox{--} it should be ignored by the receiver.
                                     ROHC-PacketSizeList-r4
}
UL-RLC-Mode ::=
   RLC-Mode ::=
ul-AM-RLC-Mode
                                 CHOICE {
                                    UL-AM-RLC-Mode,
   ul-UM-RLC-Mode
                                     UL-UM-RLC-Mode,
   ul-TM-RLC-Mode
                                     UL-TM-RLC-Mode,
                                     NULL
   spare
}
UL-TM-RLC-Mode ::=
                                 SEQUENCE {
   transmissionRLC-Discard
                                 TransmissionRLC-Discard
                                                                      OPTIONAL,
   segmentationIndication
                                    BOOLEAN
                                SEQUENCE {
UL-UM-RLC-Mode ::=
   transmissionRLC-Discard
                                  TransmissionRLC-Discard
                                                                      OPTIONAL
UL-TransportChannelType ::= CHOICE {
   dch
                                     TransportChannelIdentity,
   rach
                                     NULL,
    -- dummy is not used in this version of the specification and
    -- if received the UE behaviour is not specified.
   dummy
                                     NULL.
                                      TransportChannelIdentity
   usch
}
UM-RLC-DuplAvoid-Reord-Info-r6 ::= SEQUENCE {
                                     TimerDAR-r6.
   timer-DAR
   widowSize-DAR
                                     WindowSizeDAR-r6
UM-RLC-OutOSeqDelivery-Info-r6 ::= SEQUENCE {
   timer-OSD
                                     TimerOSD-r6
                                                                  OPTIONAL,
    windowSize-OSD
                                     WindowSizeOSD-r6
WindowSizeDAR-r6 ::=
                                  ENUMERATED {
                                     ws4, ws8, ws16, ws32, ws40, ws48,
                                     ws56, ws64 }
WindowSizeOSD-r6 ::=
                                  ENUMERATED {
                                     ws8, ws16, ws32, ws40, ws48,
                                      ws56, ws64 }
__ *************************
      TRANSPORT CHANNEL INFORMATION ELEMENTS (10.3.5)
AddOrReconfMAC-dFlow ::=
                                 SEQUENCE {
  mac-hs-AddReconfQueue-List MAC-hs-AddReconfQueue-List OPTIONAL,
   mac-hs-DelQueue-List
                                    MAC-hs-DelQueue-List
                                                                   OPTIONAL
}
AddOrReconfMAC-ehs-ReordQ ::= SEQUENCE {
    mac-ehs-AddReconfQueue-List MAC-ehs-AddReconfReordQ-List OPTIONAL,
    -- dummy is not used in this version of the specification, it should
   -- not be sent and if received it should be ignored.
                                     MAC-ehs-DelReordQ-List
                                                                  OPTIONAL
}
AllowedTFC-List ::=
                                 SEQUENCE (SIZE (1..maxTFC)) OF
                                     TFC-Value
AllowedTFI-List ::=
                                  SEQUENCE (SIZE (1..maxTF)) OF
                                     INTEGER (0..31)
```

```
BitModeRLC-SizeInfo ::= CHOICE {
                                     INTEGER (0..127),
   sizeTvpe1
    -- Actual value sizeType2 = (part1 * 8) + 128 + part2
    sizeType2
                                        SEQUENCE {
                                           INTEGER (0..15),
       part1
                                            INTEGER (1..7)
       part2
                                                                             OPTIONAL
    -- Actual value sizeType3 = (part1 * 16) + 256 + part2
    sizeType3
                                        SEQUENCE {
                                           INTEGER (0..47),
       part1
                                            INTEGER (1..15)
       part2
                                                                            OPTIONAL
    -- Actual value sizeType4 = (part1 * 64) + 1024 + part2
    sizeType4
                                        SEQUENCE {
                                            INTEGER (0..62),
       part1
                                                                      OPTIONAL
                                            INTEGER (1..63)
       part2
    }
}
-- Actual value BLER-QualityValue = IE value * 0.1
BLER-QualityValue ::=
                                   INTEGER (-63..0)
ChannelCodingType ::=
                                   CHOICE {
   -- noCoding is only used for TDD in this version of the specification,
    -- otherwise it should be ignored
   noCoding
                                        NULL,
   convolutional
                                        CodingRate,
   turbo
}
CodingRate ::=
                                    ENUMERATED {
                                        half,
                                        third }
CommonDynamicTF-Info ::=
                                    SEQUENCE {
                                    CHOICE {
   rlc-Size
                                          sequence {
       fdd
           octetModeRLC-SizeInfoType2
                                                OctetModeRLC-SizeInfoType2
                                           SEQUENCE {
        tdd
               SEQUENCE {
monTDD-Choice CHOICE {
 bitModeRLC-SizeInfo BitMo
         commonTDD-Choice
                bitModeRLC-SizeInfo BitModeRLC-SizeInfo,
octetModeRLC-SizeInfoType1 OctetModeRLC-SizeInfoType1
   numberOfTbSizeList
                                   SEQUENCE (SIZE (1..maxTF)) OF
                                            NumberOfTransportBlocks,
   logicalChannelList
                                   LogicalChannelList
}
CommonDynamicTF-Info-DynamicTTI ::= SEQUENCE {
     התווויסוובים CHOICE {
bitModeRLC-SizeInfo
   commonTDD-Choice
                                       BitModeRLC-SizeInfo,
OctetModeRLC-SizeInfoType1
       octetModeRLC-SizeInfoType1
   numberOfTbSizeAndTTIList
                                      NumberOfTbSizeAndTTIList,
    logicalChannelList
                                        LogicalChannelList
}
CommonDynamicTF-InfoList ::= SEQUENCE (SIZE (1..maxTF)) OF
                                       CommonDynamicTF-Info
\texttt{CommonDynamicTF-InfoList-DynamicTTI} \ ::= \ \texttt{SEQUENCE} \ (\texttt{SIZE} \ (\texttt{1..maxTF})) \ \texttt{OF}
                                        CommonDynamicTF-Info-DynamicTTI
CommonTransChTFS ::=
                                    SEQUENCE {
                                        CHOICE {
   tti
        tti10
                                             CommonDynamicTF-InfoList,
        tti20
                                             CommonDynamicTF-InfoList,
                                            CommonDynamicTF-InfoList,
        tti40
       tti80
                                            CommonDynamicTF-InfoList,
                                            CommonDynamicTF-InfoList-DynamicTTI
       dynamic
    semistaticTF-Information
                                      SemistaticTF-Information
}
```

```
CommonTransChTFS-LCR ::=
                                       SEQUENCE {
   tti
                                       CHOICE {
       tti5
                                           CommonDynamicTF-InfoList,
                                           CommonDynamicTF-InfoList,
       tti10
       tti20
                                           CommonDynamicTF-InfoList,
       tti40
                                           CommonDynamicTF-InfoList,
                                           CommonDynamicTF-InfoList,
       tti80
                                           CommonDynamicTF-InfoList-DynamicTTI
       dynamic
   semistaticTF-Information
                                      SemistaticTF-Information
}
Common-MAC-ehs-ReorderingQueue ::= SEQUENCE {
   mac-ehs-QueueId
                                      MAC-ehs-QueueId,
   t1-ReleaseTimer
                                       T1-ReleaseTimer,
   reorderingResetTimer
                                       Treset-ResetTimer
                                                                              OPTIONAL,
   mac-ehsWindowSize
                                      MAC-hs-WindowSize
Common-MAC-ehs-ReorderingQueueList ::= SEQUENCE (SIZE (1.. maxCommonQueueID)) OF
                                       Common-MAC-ehs-ReorderingQueue
CPCH-SetID ::=
                                   INTEGER (1..maxCPCHsets)
CRC-Size ··=
                                   ENUMERATED {
                                      crc0, crc8, crc12, crc16, crc24 }
DedicatedDynamicTF-Info ::=
                                   SEQUENCE {
   rlc-Size
                                      CHOICE {
                                          BitModeRLC-SizeInfo,
       bitMode
       octetModeType1
                                           OctetModeRLC-SizeInfoType1
   numberOfTbSizeList
                                  SEQUENCE (SIZE (1..maxTF)) OF
                                      NumberOfTransportBlocks,
   logicalChannelList
                                  LogicalChannelList
}
DedicatedDynamicTF-Info-DynamicTTI ::= SEQUENCE {
   rlc-Size
                                      CHOICE {
       bitMode
                                          BitModeRLC-SizeInfo,
       octetModeType1
                                          OctetModeRLC-SizeInfoType1
   },
numberOfTbSizeAndTTIList
NumberOfTbSizeAndTTIList
LogicalChannelList
                                     NumberOfTbSizeAndTTIList,
}
DedicatedDynamicTF-InfoList ::= SEQUENCE (SIZE (1..maxTF)) OF
                                      DedicatedDynamicTF-Info
DedicatedDynamicTF-InfoList-DynamicTTI ::= SEQUENCE (SIZE (1..maxTF)) OF
                                      DedicatedDynamicTF-Info-DynamicTTI
DedicatedTransChTFS ::=
                                  SEQUENCE {
   tti
       tti10
                                           DedicatedDynamicTF-InfoList,
                                           DedicatedDynamicTF-InfoList,
       tti20
       tti40
                                           DedicatedDynamicTF-InfoList,
                                           DedicatedDynamicTF-InfoList,
       tti80
       dynamic
                                           DedicatedDynamicTF-InfoList-DynamicTTI
   semistaticTF-Information
                                      SemistaticTF-Information
}
-- The maximum allowed size of DL-AddReconfTransChInfo2List sequence is 16
DL-AddReconfTransChInformation2
-- The maximum allowed size of DL-AddReconfTransChInfoList sequence is 16
DL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
                                      DL-AddReconfTransChInformation
 -- The maximum allowed size of DL-AddReconfTransChInfoList-r4 sequence is 16
DL-AddReconfTransChInfoList-r4 ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
                                       DL-AddReconfTransChInformation-r4
-- The maximum allowed size of DL-AddReconfTransChInfoList-r5 sequence is 16
\verb|DL-AddReconfTransChInfoList-r5|::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF |
                                       DL-AddReconfTransChInformation-r5
```

```
-- The maximum allowed size of DL-AddReconfTransChInfoList-r7 sequence is 16
DL-AddReconfTransChInfoList-r7 ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
                                       DL-AddReconfTransChInformation-r7
-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of messages other than: Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation ::= SEQUENCE {
    dl-TransportChannelType
                                       DL-TrCH-Type,
    dl-transportChannelIdentity
                                        TransportChannelIdentity,
                                        CHOICE {
    tfs-SignallingMode
        explicit-config
                                            TransportFormatSet,
        sameAsULTrCH
                                            UL-TransportChannelIdentity
    dch-QualityTarget
                                       OualityTarget
                                                                            OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
                                        TM-SignallingInfo
                                                                            OPTIONAL
}
DL-AddReconfTransChInformation-r4 ::= SEQUENCE {
                                        DL-TrCH-Type,
    dl-TransportChannelType
    dl-TransportChannelType
dl-transportChannelIdentity
                                        TransportChannelIdentity,
    tfs-SignallingMode
                                        CHOICE {
        explicit-config
                                            TransportFormatSet,
        sameAsULTrCH
                                            UL-TransportChannelIdentity
    dch-QualityTarget
                                        QualityTarget
                                                                            OPTIONAL
}
DL-AddReconfTransChInformation-r5 ::= SEQUENCE {
    dl-TransportChannelType
                                        DL-TrCH-TypeId1-r5,
    tfs-SignallingMode
                                        CHOICE {
        explicit-config
                                            TransportFormatSet,
        sameAsULTrCH
                                            UL-TransportChannelIdentity,
       hsdsch
                                            HSDSCH-Info
    dch-QualityTarget
                                        QualityTarget
                                                                            OPTIONAL
}
DL-AddReconfTransChInformation-r7 ::= SEQUENCE {
    dl-TransportChannelType DL-TrCH-TypeId1-r5,
    tfs-SignallingMode
                                        CHOICE {
        explicit-config
                                            TransportFormatSet,
        sameAsULTrCH
                                            UL-TransportChannelIdentity,
       hsdsch
                                            HSDSCH-Info-r7
    dch-QualityTarget
                                        QualityTarget
                                                                            OPTIONAL
}
-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation2 ::= SEQUENCE {
    dl-TransportChannelType
                                      DL-TrCH-Type,
    {\tt transportChannelIdentity}
                                        TransportChannelIdentity,
    tfs-SignallingMode
                                       CHOICE {
        explicit-config
                                            TransportFormatSet,
       sameAsULTrCH
                                            UL-TransportChannelIdentity
    qualityTarget
                                        QualityTarget
                                                                            OPTIONAL
}
DL-CommonTransChInfo ::=
                                    SEQUENCE {
    sccpch-TFCS
                                       TFCS
                                                                            OPTIONAL.
    -- modeSpecificInfo should be optional. A new version of this IE should be defined
    -- to be used in later versions of messages using this IE
    modeSpecificInfo
                                        CHOICE {
                                            SEQUENCE {
        fdd
            dl-Parameters
                                                CHOICE {
                dl-DCH-TFCS
                                                    TFCS,
                sameAsUL
                                                    NULL
                                                                            OPTIONAL
                                            SEQUENCE {
            individualDL-CCTrCH-InfoList
                                               IndividualDL-CCTrCH-InfoList
                                                                            OPTIONAL
```

```
}
    }
}
DL-CommonTransChInfo-r4 ::=
                                    SEQUENCE {
                                                                            OPTIONAL,
   sccpch-TFCS
                                        CHOICE {
   modeSpecificInfo
                                            SEQUENCE {
       fdd
                                                CHOICE {
            dl-Parameters
                dl-DCH-TFCS
                                                   SEQUENCE {
                   tfcs
                                                        TFCS
                                                                            OPTIONAL
                }.
                sameAsUL
                                                    NULL
           }
                                                                            OPTIONAL
        },
                                           SEQUENCE {
        tdd
            individualDL-CCTrCH-InfoList
                                               IndividualDL-CCTrCH-InfoList
                                                                            OPTIONAL
        OPTIONAL
DL-DeletedTransChInfoList ::=
                                    SEQUENCE (SIZE (1..maxTrCH)) OF
                                        DL-TransportChannelIdentity
DL-DeletedTransChInfoList-r5 ::=
                                    SEQUENCE (SIZE (1..maxTrCH)) OF
                                       DL-TransportChannelIdentity-r5
DL-DeletedTransChInfoList-r7 ::=
                                    SEQUENCE (SIZE (1..maxTrCH)) OF
                                       DL-TransportChannelIdentity-r7
DL-TransportChannelIdentity ::=
                                    SEQUENCE {
    dl-TransportChannelType
                                       DL-TrCH-Type,
    dl-TransportChannelIdentity
                                        TransportChannelIdentity
}
DL-TransportChannelIdentity-r5 ::= SEQUENCE {
   dl-TransportChannelType
                                       DL-TrCH-TypeId2-r5
DL-TransportChannelIdentity-r7 ::= SEQUENCE {
                                       DL-TrCH-TypeId2-r7
   dl-TransportChannelType
-- The choice "dsch" should not be used in FDD mode, and if received the UE behaviour is unspecified
DL-TrCH-Type ::=
                                    ENUMERATED {dch, dsch}
DL-TrCH-TypeId1-r5 ::=
                                    CHOICE {
                                        TransportChannelIdentity,
    -- The choice "dsch" should not be used in FDD mode, and if received
    -- the UE behaviour is unspecified.
                                        TransportChannelIdentity,
    dsch
   hsdsch
DL-TrCH-TypeId2-r5 ::=
                                    CHOICE {
                                       TransportChannelIdentity,
    -- The choice "dsch" should not be used in FDD mode, and if received
    -- the UE behaviour is unspecified.
   dsch
                                        TransportChannelIdentity,
   hsdsch
                                        MAC-d-FlowIdentity
DL-TrCH-TypeId2-r7 ::=
                                    CHOICE {
                                       TransportChannelIdentity,
    -- The choice "dsch" should not be used in FDD mode, and if received
    -- the UE behaviour is unspecified.
   dsch
                                        TransportChannelIdentity,
   hsdsch
                                        CHOICE {
       mac-hs
                                            MAC-d-FlowIdentity,
                                            MAC-ehs-QueueId
        mac-ehs
}
DRAC-ClassIdentity ::=
                                   INTEGER (1..maxDRACclasses)
DRAC-StaticInformation ::=
                                    SEOUENCE {
                                       TransmissionTimeValidity,
    transmissionTimeValidity
```

```
timeDurationBeforeRetry
                                         TimeDurationBeforeRetry,
    drac-ClassIdentity
                                          DRAC-ClassIdentity
}
DRAC-StaticInformationList ::=
                                     SEQUENCE (SIZE (1..maxTrCH)) OF
                                          DRAC-StaticInformation
{\tt E-DCH-AddReconf-MAC-d-Flow} ::= \\ {\tt SEQUENCE} \ \big\{
    mac-d-FlowIdentity
                                        E-DCH-MAC-d-FlowIdentity,
    mac-d-FlowPowerOffset
                                           E-DCH-MAC-d-FlowPowerOffset
                                                                                 OPTIONAL,
    mac-d-FlowMaxRetrans
                                          E-DCH-MAC-d-FlowMaxRetrans
                                                                                 OPTIONAL,
    mac-d-FlowMultiplexingList
                                          E-DCH-MAC-d-FlowMultiplexingList OPTIONAL,
    transmissionGrantType
                                          CHOICE {
        non-ScheduledTransGrantInfo SEQUENCE {
            maxMAC-e-PDUContents
                                                   INTEGER (1..19982),
            ms2-NonSchedTransmGrantHARQAlloc BIT STRING (SIZE (8))
                                                                                OPTIONAL
        scheduledTransmissionGrantInfo
                                             NULL
       OPTIONAL
}
E-DCH-AddReconf-MAC-d-Flow-r7 ::= SEQUENCE {
    mac-d-FlowIdentity E-DCH-MAC-d-FlowIdentity, mac-d-FlowPowerOffset E-DCH-MAC-d-FlowPowerOffset
                                                                                OPTIONAL,
   mac-d-FlowMaxRetrans
mac-d-FlowRetransTimer
mac-d-FlowMultin
    mac-d-FlowMaxRetrans E-DCH-MAC-d-FlowMaxRetrans OPTIONAL, mac-d-FlowRetransTimer E-DCH-MAC-d-FlowRetransTimer OPTIONAL, mac-d-FlowMultiplexingList E-DCH-MAC-d-FlowMultiplexingList OPTIONAL, transmissionGrantType CHOTCE {
        CHOICE {
                                                 SEQUENCE {
                                                        INTEGER (1..19982),
                     maxMAC-e-PDUContents
                     ms2-NonSchedTransmGrantHARQAlloc
                                                          BIT STRING (SIZE (8))
                                                                                         OPTIONAL
                 },
                 tdd
                                                       NULL
            }
        scheduledTransmissionGrantInfo
                                               NULL
        OPTIONAL
}
E-DCH-AddReconf-MAC-d-FlowList ::= SEQUENCE (SIZE (1..maxE-DCHMACdFlow)) OF
                              E-DCH-AddReconf-MAC-d-Flow
E-DCH-AddReconf-MAC-d-FlowList-r7 ::= SEQUENCE (SIZE (1..maxE-DCHMACdFlow)) OF
                                           E-DCH-AddReconf-MAC-d-Flow-r7
E-DCH-MAC-d-FlowIdentity ::=
                                     INTEGER (0..maxE-DCHMACdFlow-1)
E-DCH-MAC-d-FlowMaxRetrans ::=
                                      INTEGER (0..15)
{\tt E-DCH-MAC-d-FlowMultiplexingList} \ ::= \ {\tt BIT} \ {\tt STRING} \ ({\tt SIZE} \ ({\tt maxE-DCHMACdFlow}) \, )
                                      INTEGER (0..6)
E-DCH-MAC-d-FlowPowerOffset ::=
E-DCH-MAC-d-FlowRetransTimer ::=
                                      ENUMERATED {
                                           \verb|ms10, ms15, ms20, ms25, ms30, ms35, ms40, ms45, ms50,\\
                                           ms55, ms60, ms65, ms70, ms75, ms80, ms85, ms90, ms95,
                                           ms100, ms110, ms120, ms140, ms160, ms200, ms240, ms280,
                                           ms320, ms400, ms480, ms560 }
E-DCH-TTI ::=
                                      ENUMERATED { tti2, tti10 }
ExplicitTFCS-Configuration ::=
                                      CHOICE {
                                           TFCS-ReconfAdd,
    complete
    addition
                                           TFCS-ReconfAdd,
    removal
                                           TFCS-RemovalList,
    replacement
                                           SEQUENCE {
        tfcsRemoval
                                               TFCS-RemovalList.
        tfcsAdd
                                               TFCS-ReconfAdd
}
                                     INTEGER (0..15)
GainFactor ::=
GainFactorInformation ::= signalledGainFactors
                                     CHOICE {
                                          SignalledGainFactors,
    computedGainFactors
                                           ReferenceTFC-ID
```

```
}
HSDSCH-Info ::=
                                     SEQUENCE {
                                      HARQ-Ìnfo
   harqInfo
                                                                 OPTIONAL.
                                        AddOrReconfMAC-dFlow
    addOrReconfMAC-dFlow
                                                                 OPTIONAL
HSDSCH-Info-r7 ::=
                                     SEQUENCE {
    harqInfo
                                       HARQ-Info-r7
                                                                 OPTIONAL,
    dl-MAC-HeaderType
                                         CHOICE {
                                           AddOrReconfMAC-dFlow,
       mac-hs
                                             AddOrReconfMAC-ehs-ReordQ
       mac-ehs
           OPTIONAL
}
HARQ-Info ::=
                                    SEQUENCE {
                                        INTEGÈR (1..8),
   numberOfProcesses
    memoryPartitioning
                                         CHOICE {
       implicit
       explicit
                                             SEQUENCE (SIZE (1..maxHProcesses)) OF
                                                 HARQMemorySize
}
HARO-Info-r7 :=
                                     SECUENCE {
   numberOfProcesses
                                      ENUMERATED { n1, n2, n3, n4, n5, n6, n7, n8,
                                            n12, n14, n16 },
                                         CHOICE {
    memoryPartitioning
       implicit
                                            NULL,
        explicit
                                             SEQUENCE {
                                                SEQUENCE (SIZE (1..maxHProcesses)) OF
           memorySize
                                                    HARQMemorySize,
                                                 SEQUENCE (SIZE (1..maxHProcesses)) OF
            additionalMemorySizesForMIMO
                                                     HARQMemorySize OPTIONAL
        }
    }
}
HARQMemorySize ::=
                                     ENUMERATED {
                                         hms800, hms1600, hms2400, hms3200, hms4000,
                                         hms4800, hms5600, hms6400, hms7200, hms8000,
                                         hms8800, hms9600, hms10400, hms11200, hms12000,
                                         hms12800, hms13600, hms14400, hms15200, hms16000, hms17600, hms19200, hms20800, hms22400, hms24000,
                                         hms25600, hms27200, hms28800, hms30400, hms32000,
                                         hms36000, hms40000, hms44000, hms48000, hms52000, hms56000, hms60000, hms64000, hms68000, hms72000,
                                         hms76000, hms80000, hms88000, hms96000, hms104000,
                                         hms112000, hms120000, hms128000, hms136000, hms144000,
                                         hms152000, hms160000, hms176000, hms192000, hms208000,
                                         hms224000, hms240000, hms256000, hms272000, hms288000, hms304000 }
IndividualDL-CCTrCH-Info ::=
                                     SEQUENCE {
                                      TFCS-Identity,
    dl-TFCS-Identity
                                         CHOICE {
    tfcs-SignallingMode
        explicit-config
                                             TFCS.
        sameAsUL
                                             TFCS-Identity
}
IndividualDL-CCTrCH-InfoList ::=
                                     SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                       IndividualDL-CCTrCH-Info
IndividualUL-CCTrCH-Info ::=
                                     SEQUENCE {
                                         TFCS-Identity,
    ul-TFCS-Identity
    ul-TFCS
                                         TFCS ,
    tfc-Subset
                                         TFC-Subset
IndividualUL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        IndividualUL-CCTrCH-Info
                                     SEQUENCE {
LogicalChannelByRB ::=
    rb-Identity
                                        RB-Identity,
    logChOfRb
                                         INTEGER (0..1)
                                                                             OPTIONAL
}
```

```
LogicalChannelList ::=
                                CHOICE {
       allSizes
                                          NULL,
       configured
                                          NULL,
                                          SEQUENCE (SIZE (1..15)) OF
       explicitList
                                              LogicalChannelByRB
}
{\tt MAC-d-FlowIdentityDCHandHSDSCH} \ ::= \ {\tt SEQUENCE} \ \big\{
   dch-transport-ch-id TransportChannelIdentity, hsdsch-mac-d-flow-id MAC-d-FlowIdentity
}
                                 INTEGER (0..7)
MAC-d-FlowIdentity ::=
MAC-d-PDU-SizeInfo-List ::=
                                 SEQUENCE (SIZE(1.. maxMAC-d-PDUsizes)) OF
                                      MAC-d-PDUsizeInfo
--MAC-d-Pdu sizes need to be defined
MAC-d-PDUsizeInfo ::=
                                  SEQUENCE {
   mac-d-PDU-Size
                                      INTEGER (1..5000),
   mac-d-PDU-Index
                                      INTEGER(0..7)
}
MAC-hs-AddReconfQueue
MAC-hs-AddReconfQueue ::= SEQUENCE {
                                 INTEGER(0..7),
MAC-d-FlowIdentity,
   mac-hsQueueId
   mac-dFlowId
   reorderingReleaseTimer
                                  T1-ReleaseTimer,
MAC-hs-WindowSize,
MAC-d-PDU-SizeInfo-List
   mac-hsWindowSize
   mac-d-PDU-SizeInfo-List
                                                                        OPTIONAL
}
MAC-hs-DelQueue-List ::= SEQUENCE (SIZE(1..maxQueueIDs)) OF
                                     MAC-hs-DelQueue
                                  SEQUENCE {
MAC-hs-DelOueue ::=
                                      INTEGER(0..7)
   mac-hsQueueId
MAC-ehs-AddReconfReordQ-List ::= SEQUENCE (SIZE(1..maxQueueIDs)) OF
                                     MAC-ehs-AddReconfReordO
MAC-ehs-AddReconfReordQ ::= SEQUENCE {
                                  MAC-ehs-QueueId,
   mac-ehs-QueueId
   reorderingReleaseTimer
                                      T1-ReleaseTimer,
   reorderingResetTimer
                                      Treset-ResetTimer
                                                                            OPTIONAL,
   mac-ehsWindowSize
                                      MAC-hs-WindowSize
}
                               SEQUENCE (SIZE(1..maxQueueIDs)) OF
MAC-ehs-DelReordQ-List ::=
                                    MAC-ehs-DelReordQ
                          SEQUENCE {
MAC-ehs-DelReordQ ::=
                                     MAC-ehs-QueueId
   mac-ehs-QueueId
{\tt MAC-ehs-QueueIdDCHandHSDSCH} \ ::= \ \ {\tt SEQUENCE} \ \big\{
                                  TransportChannelIdentity,
   dch-transport-ch-id
hsdsch-mac-ehs-QueueId
                                      MAC-ehs-QueueId
MAC-ehs-QueueId ::=
                                  INTEGER (0..7)
MAC-hs-WindowSize ::=
                                  ENUMERATED {
                                      mws4, mws6, mws8, mws12, mws16, mws24, mws32 }
NumberOfTbSizeAndTTIList ::=
                                  SEQUENCE (SIZE (1..maxTF)) OF SEQUENCE {
       numberOfTransportBlocks
                                          NumberOfTransportBlocks,
       transmissionTimeInterval
                                          TransmissionTimeInterval
}
                                  ENUMERATED {
MessType ::=
                                      transportFormatCombinationControl }
Non-allowedTFC-List ::=
                                  SEQUENCE (SIZE (1..maxTFC)) OF
                                      TFC-Value
```

```
CHOICE {
NumberOfTransportBlocks ::=
                                     NULL,
   zero
                                     NULL,
   one
    small
                                      INTEGER (2..17),
                                      INTEGER (18..512)
    large
}
OctetModeRLC-SizeInfoType1 ::= CHOICE {
    -- Actual size = (8 * sizeType1) + 16
    sizeType1
                                     INTEGER (0..31),
                                     SEQUENCE {
    sizeType2
       -- Actual size = (32 * part1) + 272 + (part2 * 8)
                                         INTEGER (0..23),
       part2
                                         INTEGER (1..3)
                                                                       OPTIONAL
    },
    sizeType3
                                     SEQUENCE {
       -- Actual size = (64 * part1) + 1040 + (part2 * 8)
                                         INTEGER (0..61),
                                         INTEGER (1..7)
                                                                       OPTIONAL
       part2
    }
}
OctetModeRLC-SizeInfoType2 ::= CHOICE {
    -- Actual size = (sizeType1 * 8) + 48
                                     INTEGER (0..31),
    sizeType1
    -- Actual size = (sizeType2 * 16) + 312
                                     INTEGER (0..63),
    -- Actual size = (sizeType3 *64) + 1384
                                     INTEGER (0..56)
    sizeType3
}
PowerOffsetInfoShort ::=
                                SEQUENCE {
   referenceTFC
                                     TFC-Value,
   modeSpecificInfo
                                     CHOICE {
                                      SEQUENCE {
       fdd
           gainFactorBetaC
                                            GainFactor
                                        NULL
       tdd
   gainFactorBetaD
                                     GainFactor
}
PowerOffsetInformation ::= SEQUENCE { gainFactorInformation GainFactorInformation,
    -- PowerOffsetPp-m is always absent in TDD
                                                                       OPTIONAL
                                     PowerOffsetPp-m
   powerOffsetPp-m
}
PowerOffsetPp-m ::=
                                 INTEGER (-5..10)
UL-AddReconfTransChInfoList,
   dl-CommonTransChInfo
                                    DL-CommonTransChInfo,
   dl-TrChInfoList
                                     DL-AddReconfTransChInfoList
}
                                 SEQUENCE {
QualityTarget ::=
   bler-QualityValue
                                     BLER-QualityValue
RateMatchingAttribute ::=
                                 INTEGER (1..hiRM)
ReferenceTFC-ID ::=
                                 INTEGER (0..3)
RestrictedTrChInfo ::=
                                SEQUENCE {
   ul-TransportChannelType
restrictedTrChIdentity
                                 UL-TrCH-Type,
                                     TransportChannelIdentity,
    allowedTFI-List
                                    AllowedTFI-List
                                                                      OPTIONAL
}
RestrictedTrChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
                                    RestrictedTrChInfo
SemistaticTF-Information ::=
                                 SEQUENCE {
    -- TABULAR: Transmission time interval has been included in the IE CommonTransChTFS.
```

```
channelCodingType
                                       ChannelCodingType,
   rateMatchingAttribute
                                       RateMatchingAttribute,
   crc-Size
                                       CRC-Size
}
SignalledGainFactors ::=
                             SEQUENCE {
                                     CHOICE {
   modeSpecificInfo
                                           SEQUENCE {
       fdd
         gainFactorBetaC
                                               GainFactor
       tdd
                                          NULL
    gainFactorBetaD
                                     GainFactor,
   referenceTFC-ID
                                      ReferenceTFC-ID
                                                                          OPTIONAL
}
{\tt SplitTFCI-Signalling ::= } \qquad {\tt SEQUENCE } \big\{
                                  SplitType
INTEGER (1..10)
                                                                      OPTIONAL,
   splitType
   tfci-Field2-Length
                                                                      OPTIONAL,
                                       ExplicitTFCS-Configuration OPTIONAL,
TFCI-Field2-Information OPTIONAL
   tfci-Field1-Information
    tfci-Field2-Information
                                   ENUMERATED {
SplitType ::=
                                       hardSplit, logicalSplit }
T1-ReleaseTimer ::=
                                   ENUMERATED {
                                      rt10, rt20, rt30, rt40, rt50, rt60, rt70, rt80, rt90, rt100,
                                       rt120, rt140, rt160, rt200, rt300,
                                       rt400 }
TFC-Subset ::=
                                   CHOICE {
   minimumAllowedTFC-Number
                                      TFC-Value,
                                       AllowedTFC-List,
    allowedTFC-List
    non-allowedTFC-List
                                       Non-allowedTFC-List,
   restrictedTrChInfoList
                                      RestrictedTrChInfoList,
   fullTFCS
                                       NULL
}
TFC-SubsetList ::=
                                  SEQUENCE (SIZE (1.. maxTFCsub)) OF SEQUENCE {
   modeSpecificInfo
                                     CHOICE {
       fdd
                                           NULL.
                                           SEQUENCE {
       tdd
           tfcs-ID
                                               TFCS-Identity
                                                                OPTIONAL
       }
    tfc-Subset
                                       TFC-Subset
TFC-Value ::=
                                   INTEGER (0..1023)
TFCI-Field2-Information ::=
                                  CHOICE {
                                       TFCI-RangeList,
   tfci-Range
    explicit-config
                                       ExplicitTFCS-Configuration
}
TFCI-Range ::=
                                  SEQUENCE {
   maxTFCIField2Value
                                       INTEGER (1..1023),
   tfcs-InfoForDSCH
                                       TFCS-InfoForDSCH
TFCI-RangeList ::=
                                   SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
                                       TFCI-Range
TFCS ::=
                                   CHOICE {
                                      ExplicitTFCS-Configuration,
   normalTFCI-Signalling
    -- dummy is not used in this version of specification, it should
    \mbox{--} not be sent and if received the UE behaviour is not specified.
   dummy
                                       SplitTFCI-Signalling
}
TFCS-Identity ::=
                                   SEQUENCE {
                                      TFCS-IdentityPlain
                                                                         DEFAULT 1,
   tfcs-TD
    sharedChannelIndicator
                                       BOOLEAN
                                  INTEGER (1..8)
TFCS-IdentityPlain ::=
```

```
TFCS-InfoForDSCH ::=
                                  CHOICE {
  ctfc2bit
                                    INTEGER (0..3),
   ctfc4bit
                                     INTEGER (0..15),
   ctfc6bit
                                      INTEGER (0..63),
                                     INTEGER (0..255),
   ctfc8bit
                                      INTEGER (0..4095),
   ctfc12bit
                                     INTEGER (0..65535),
   ctfc16bit
   ctfc24bit
                                     INTEGER (0..16777215)
TFCS-ReconfAdd ::=
                                  SEQUENCE {
                                  CHOICE{
   ctfcSize
       ctfc2Bit
                                      SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
                                         INTEGER (0..3),
                                             PowerOffsetInformation
           powerOffsetInformation
                                                                          OPTIONAL
                                       SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
       ctfc4Bit
                                           INTEGER (0..15),
          ct.fc4
          powerOffsetInformation
                                             PowerOffsetInformation
       },
       ctfc6Bit
                                        SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
                                             INTEGER (0..63),
                                             PowerOffsetInformation
          powerOffsetInformation
       ctfc8Bit
                                         SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
          ctfc8
                                           INTEGER (0..255),
                                             PowerOffsetInformation OPTIONAL
          powerOffsetInformation
                                         SEQUENCE (SIZE(1..maxTFC)) OF SEQUENCE {
       ctfc12Bit
           ctfc12
                                             INTEGER (0..4095),
          powerOffsetInformation
                                             PowerOffsetInformation
       ctfc16Bit
                                       SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
                                          INTEGER(0..65535),
           ctfc16
                                             PowerOffsetInformation
           powerOffsetInformation
                                       SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE \{
       ctfc24Bit
          ctfc24 INTEGER(0..16777215),
powerOffsetInformation PowerOffsetInformation OPTIONAL
   }
}
TFCS-Removal ::=
                                SEQUENCE {
                                   INTEGER (0..1023)
   tfci
TFCS-RemovalList ::= SEQUENCE (SIZE (1..maxTFC)) OF
                                     TFCS-Removal
TimeDurationBeforeRetry ::=
                                 INTEGER (1..256)
                                  SEQUENCE {
TM-SignallingInfo ::=
                                     MessType,
   messType
                                     CHOICE {
   tm-SignallingMode
                                      NULL,
SEQUENCE {
       mode1
           -- in ul-controlledTrChList, TrCH-Type is always DCH
                                             UL-ControlledTrChList
          ul-controlledTrChList
   }
}
TransmissionTimeInterval ::=
                                 ENUMERATED {
                                     tti10, tti20, tti40, tti80 }
TransmissionTimeValidity ::=
                                INTEGER (1..256)
TransportChannelIdentity ::=
                                 INTEGER (1..32)
TransportChannelIdentityDCHandDSCH ::= SEQUENCE {
  dch-transport-ch-id TransportChannelIdentity,
dsch-transport-ch-id TransportChannelIdentity
   dsch-transport-ch-id
                                 TransportChannelIdentity
}
                                 CHOICE {
TransportFormatSet ::=
```

```
dedicatedTransChTFS
                                        DedicatedTransChTFS,
    commonTransChTFS
                                        CommonTransChTFS
}
TransportFormatSet-LCR ::=
                                        CHOICE {
    dedicatedTransChTFS
                                        DedicatedTransChTFS,
    commonTransChTFS-LCR
                                        CommonTransChTFS-LCR
}
Treset-ResetTimer ::=
                                    ENUMERATED {
                                        rt1, rt2, rt3, rt4 }
-- The maximum allowed size of UL-AddReconfTransChInfoList sequence is 16
UL-AddReconfTransChInfoList ::=
                                  SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
                                        UL-AddReconfTransChInformation
-- The maximum allowed size of UL-AddReconfTransChInfoList-r6 sequence is 32
UL-AddReconfTransChInfoList-r6 ::= SEQUENCE (SIZE (1..maxTrCH)) OF
                                        UL-AddReconfTransChInformation-r6
-- The maximum allowed size of UL-AddReconfTransChInfoList-r7 sequence is 32
UL-AddReconfTransChInfoList-r7 ::= SEQUENCE (SIZE (1..maxTrCH)) OF
                                        UL-AddReconfTransChInformation-r7
UL-AddReconfTransChInformation ::= SEQUENCE {
                                       UL-TrCH-Type,
   ul-TransportChannelType
    transportChannelIdentity
                                        TransportChannelIdentity,
    transportFormatSet
                                        TransportFormatSet
}
UL-AddReconfTransChInformation-r6 ::= CHOICE {
                                       SEQUENCE {
        ul-TransportChannelType
                                            UL-TrCH-Type,
        transportChannelIdentity
                                            TransportChannelIdentity,
        transportFormatSet
                                            TransportFormatSet
    e-dch
                                        SEQUENCE {
                                            E-DCH-TTI,
        tti
       harq-Info
                                            ENUMERATED { rv0, rvtable },
        addReconf-MAC-d-FlowList
                                            E-DCH-AddReconf-MAC-d-FlowList OPTIONAL
}
UL-AddReconfTransChInformation-r7 ::= CHOICE {
    dch-usch
                                       SEQUENCE {
       ul-TransportChannelType
                                            UL-TrCH-Type,
        transportChannelIdentity
                                            TransportChannelIdentity,
        transportFormatSet
                                           TransportFormatSet
    e-dch
                                        SEQUENCE {
       modeSpecific
                                            CHOICE {
                                                SEQUENCE {
           fdd
                tti
                                                    E-DCH-TTI
            },
            tdd
                                                NULL
                                            ENUMERATED { rv0, rvtable },
        harq-Info
        addReconf-MAC-d-FlowList
                                            E-DCH-AddReconf-MAC-d-FlowList-r7 OPTIONAL
    }
}
UL-CommonTransChInfo ::=
                                   SEQUENCE {
    -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
    -- CCTrCH Info.
    t.fc-Subset
                                        TFC-Subset
                                                                            OPTIONAL.
    prach-TFCS
                                        TFCS
                                                                            OPTIONAL.
    modeSpecificInfo
                                        CHOICE {
                                            SEQUENCE {
       fdd
            ul-TFCS
                                            TFCS
        },
        tdd
                                            SEQUENCE {
            individualUL-CCTrCH-InfoList
                                                IndividualUL-CCTrCH-InfoList
                                                                            OPTIONAL
        }
    }
                                                                            OPTIONAL
}
```

```
UL-CommonTransChInfo-r4 ::= SEQUENCE {
   -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
   -- CCTrCH Info.
                                     TFC-Subset
   tfc-Subset
                                                                        OPTIONAL.
   prach-TFCS
                                     TFCS
                                                                        OPTIONAL,
   modeSpecificInfo
                                      CHOICE {
                                         SEQUENCE {
       fdd
           ul-TFCS
                                             TFCS
       },
       tdd
                                         SEQUENCE {
                                          IndividualUL-CCTrCH-InfoList
           individualUL-CCTrCH-InfoList
                                                                             OPTIONAL
                                                                       OPTIONAL.
   tfc-SubsetList
                                     TFC-SubsetList
                                                                        OPTIONAL
}
-- In UL-ControlledTrChList, TrCH-Type is always DCH
UL-ControlledTrChList ::=
                                 SEQUENCE (SIZE (1..maxTrCH)) OF
                                     TransportChannelIdentity
                                 SEQUENCE (SIZE (1..maxTrCH)) OF
UL-DeletedTransChInfoList ::=
                                     UL-TransportChannelIdentity
                                SEQUENCE (SIZE (1..maxTrCH)) OF
UL-DeletedTransChInfoList-r6 ::=
                                     UL-TransportChannelIdentity-r6
UL-TransportChannelIdentity ::=
                                  SEQUENCE {
   ul-TransportChannelType
                                     UL-TrCH-Type,
   ul-TransportChannelIdentity
                                     TransportChannelIdentity
}
UL-TransportChannelIdentity-r6 ::= CHOICE {
   dch-usch
                                     SEQUENCE {
                                        UL-TrCH-Type,
       ul-TransportChannelType
       ul-TransportChannelIdentity
                                        TransportChannelIdentity
   e-dch
                                     E-DCH-MAC-d-FlowIdentity
}
                                  ENUMERATED {dch, usch}
UL-TrCH-Type ::=
USCH-TransportChannelsInfo ::=
                                  SEQUENCE (SIZE (1..maxTrCH)) OF
                                    SEQUENCE {
   usch-TransportChannelIdentity
                                         TransportChannelIdentity,
   usch-TFS
                                         TransportFormatSet
}
  *************
      PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6)
__ ************************
ACK-NACK-repetitionFactor ::=
                                INTEGER (1..4)
                                 INTEGER (0..7)
AC-To-ASC-Mapping ::=
AC-To-ASC-MappingTable ::=
                                 SEQUENCE (SIZE (maxASCmap)) OF
                                    AC-To-ASC-Mapping
AccessServiceClass-FDD ::=
                                 SEQUENCE {
   availableSignatureStartIndex
                                   INTEGER (0..15),
   availableSignatureEndIndex
                                     INTEGER (0..15),
   assignedSubChannelNumber
                                     BIT STRING {
                                         b3(0),
                                         b2(1),
                                         b1(2),
                                         b0(3)
                                              (SIZE(4))
}
AccessServiceClass-TDD ::=
                                 SEQUENCE {
   channelisationCodeIndices
                                     BIT STRING {
                                         chCodeIndex7(0).
                                         chCodeIndex6(1),
                                         chCodeIndex5(2),
                                         chCodeIndex4(3),
                                         chCodeIndex3(4),
```

```
chCodeIndex2(5),
                                               chCodeIndex1(6),
                                               chCodeIndex0(7)
                                               } (SIZE(8))
                                                                        OPTIONAL,
                                           CHOICE {
    subchannelSize
        size1
                                               NULL,
                                               SEQUENCE {
        size2
            -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'
                                                   ENUMERATED { subch0, subch1 } OPTIONAL
            subchannels
                                               SEQUENCE {
        size4
                                                   BIT STRING {
            subchannels
                                                       subCh3(0),
                                                       subCh2(1),
                                                       subCh1(2),
                                                       subCh0(3)
                                                       } (SIZE(4))
                                                                        OPTIONAL
        size8
                                               SEQUENCE {
            subchannels
                                                   BIT STRING {
                                                       subCh7(0),
                                                       subCh6(1),
                                                       subCh5(2),
                                                       subCh4(3),
                                                       subCh3(4),
                                                       subCh2(5),
                                                       subCh1(6),
                                                       subCh0(7)
                                                       } (SIZE(8))
                                                                        OPTIONAL
        }
    }
AccessServiceClass-TDD-r7 ::=
                                          SEQUENCE {
    {\tt channelisationCodeIndices}
                                          BIT STRING
                                               chCodeIndex15(0),
                                               chCodeIndex14(1),
                                               chCodeIndex13(2),
                                               chCodeIndex12(3),
                                               chCodeIndex11(4),
                                               chCodeIndex10(5),
                                               chCodeIndex9(6),
                                               chCodeIndex8(7),
                                               chCodeIndex7(8),
                                               chCodeIndex6(9),
                                               chCodeIndex5(10),
                                               chCodeIndex4(11).
                                               chCodeIndex3(12),
                                               chCodeIndex2(13),
                                               chCodeIndex1(14),
                                               chCodeIndex0(15)
                                                                             OPTIONAL,
                                               } (SIZE(16))
    subchannelSize
                                          CHOICE {
                                               NULL,
        size1
                                               SEQUENCE {
             -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10' subchannels ENUMERATED { subch0, subch1 } OPTIONAL
            subchannels
        },
        size4
                                               SEQUENCE {
            subchannels
                                                   BIT STRING {
                                                       subCh3(0),
                                                       subCh2(1),
                                                       subCh1(2),
                                                       subCh0(3)
                                                       } (SIZE(4))
                                                                        OPTIONAL
        size8
                                               SEQUENCE {
            subchannels
                                                   BIT STRING {
                                                       subCh7(0),
                                                       subCh6(1),
                                                       subCh5(2),
                                                       subCh4(3),
                                                       subCh3(4),
                                                       subCh2(5),
                                                       subCh1(6),
                                                       subCh0(7)
                                                       } (SIZE(8))
                                                                        OPTIONAL
        },
```

```
SEQUENCE {
        size16
            subchannels
                                                 BIT STRING {
                                                     subCh15(0),
                                                     subCh14(1),
                                                     subCh13(2),
                                                     subCh12(3),
                                                     subCh11(4),
                                                     subCh10(5),
                                                     subCh9(6),
                                                     subCh8(7),
                                                     subCh7(8),
                                                     subCh6(9),
                                                     subCh5(10),
                                                     subCh4(11),
                                                     subCh3(12),
                                                     subCh2(13),
                                                     subCh1(14),
                                                     subCh0(15)
                                                                        OPTIONAL
                                                     } (SIZE(16))
        }
    }
}
AccessServiceClass-TDD-LCR-r4 ::= SEQUENCE {
    availableSYNC-UlCodesIndics
                                        BIT STRING {
                                            sulCodeIndex7(0),
                                             sulCodeIndex6(1),
                                             sulCodeIndex5(2),
                                             sulCodeIndex4(3),
                                             sulCodeIndex3(4),
                                             sulCodeIndex2(5),
                                             sulCodeIndex1(6),
                                             sulCodeIndex0(7)
                                             } (SIZE(8))
                                                                       OPTIONAL,
                                         CHOICE {
    subchannelSize
        size1
                                             NULL,
                                             SEQUENCE {
            -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'. subchannels ENUMERATED { subch0, subch1 } OPTIONAL
            subchannels
        size4
                                             SEQUENCE {
                                                 BIT STRING {
           subchannels
                                                     subCh3(0),
                                                     subCh2(1),
                                                     subCh1(2),
                                                     subCh0(3)
                                                                        OPTIONAL
                                                     } (SIZE(4))
        size8
                                             SEQUENCE {
            subchannels
                                                 BIT STRING {
                                                     subCh7(0),
                                                     subCh6(1),
                                                     subCh5(2),
                                                     subCh4(3),
                                                     subCh3(4),
                                                     subCh2(5),
                                                     subCh1(6),
                                                     subCh0(7)
                                                     } (SIZE(8))
                                                                        OPTIONAL
       }
    }
}
AdditionalPRACH-TF-and-TFCS-CCCH-IEs ::= SEQUENCE {
                             PowerOffsetInformation,
   powerOffsetInformation
    dynamicTFInformationCCCH
                                        DynamicTFInformationCCCH
AdditionalPRACH-TF-and-TFCS-CCCH ::= SEQUENCE {
   additionalPRACH-TF-and-TFCS-CCCH-IEs AdditionalPRACH-TF-and-TFCS-CCCH-IEs
                                                                                      OPTIONAL
}
-- The order is the same as in the PRACH-SystemInformationList
AdditionalPRACH-TF-and-TFCS-CCCH-List ::= SEQUENCE (SIZE (1..maxPRACH)) OF
                                        AdditionalPRACH-TF-and-TFCS-CCCH
AICH-Info ::=
                                     SEQUENCE {
```

```
channelisationCode256
                                      ChannelisationCode256,
   sttd-Indicator
                                      BOOLEAN,
   aich-TransmissionTiming
                                      AICH-TransmissionTiming
}
AICH-PowerOffset ::=
                                  INTEGER (-22..5)
AICH-TransmissionTiming ::=
                               ENUMERATED {
                                      e0, e1 }
AllocationPeriodInfo ::=
                                 SEQUENCE {
   allocationDurationTime
                                     INTEGER (0..255),
                                      INTEGER (1..256)
-- Actual value Alpha = IE value * 0.125
                                  INTEGER (0..8)
Alpha ::=
AP-AICH-ChannelisationCode ::=
                                 INTEGER (0..255)
AP-PreambleScramblingCode ::=
                                 INTEGER (0..79)
AP-Signature ::=
                                   INTEGER (0..15)
AP-Signature-VCAM ::=
                                  SECUENCE {
   ap-Signature
                                     AP-Signature,
   availableAP-SubchannelList
                                      AvailableAP-SubchannelList OPTIONAL
}
AP-Subchannel ::=
                                  INTEGER (0..11)
ASCSetting-FDD ::=
                                      SEQUENCE {
   -- TABULAR: accessServiceClass-FDD is MD in tabular description
   -- Default value is previous ASC
   -- If this is the first ASC, the default value is all available signature and sub-channels
   accessServiceClass-FDD
                                          AccessServiceClass-FDD OPTIONAL
}
ASCSetting-TDD ::=
                                      SEOUENCE {
   -- TABULAR: accessServiceClass-TDD is MD in tabular description
   -- Default value is previous ASC
   -- If this is the first ASC, the default value is all available channelisation codes and
   -- all available sub-channels with subchannelSize=size1.
   accessServiceClass-TDD
                                          AccessServiceClass-TDD OPTIONAL
}
ASCSetting-TDD-r7 ::=
                                          SEOUENCE {
   -- TABULAR: accessServiceClass-TDD is MD in tabular description
   -- Default value is previous ASC
   -- If this is the first ASC, the default value is all available channelisation codes and
   -- all available sub-channels with subchannelSize=size1.
                                              AccessServiceClass-TDD-r7 OPTIONAL
   accessServiceClass-TDD
}
ASCSetting-TDD-LCR-r4 ::=
                                              SEQUENCE {
   -- TABULAR: accessServiceClass-TDD-LCR is MD in tabular description
   -- Default value is previous ASC
   -- If this is the first ASC, the default value is all available SYNC_UL codes and
    -- all available sub-channels with subchannelSize=size1.
   accessServiceClass-TDD-LCR
                                              AccessServiceClass-TDD-LCR-r4 OPTIONAL
AvailableAP-Signature-VCAMList ::= SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
                                      AP-Signature-VCAM
AvailableAP-SignatureList ::=
                                  SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
                                      AP-Signature
                                 SEQUENCE (SIZE (1..maxPCPCH-APsubCh)) OF
AvailableAP-SubchannelList ::=
                                      AP-Subchannel
AvailableMinimumSF-ListVCAM ::=
                                   SEQUENCE (SIZE (1..maxPCPCH-SF)) OF
                                      AvailableMinimumSF-VCAM
AvailableMinimumSF-VCAM ::=
                                  SEQUENCE {
                                     MinimumSpreadingFactor,
   minimumSpreadingFactor
   nf-Max
                                      NF-Max.
                                      MaxAvailablePCPCH-Number,
   maxAvailablePCPCH-Number
```

```
availableAP-Signature-VCAMList
                                     AvailableAP-Signature-VCAMList
}
AvailableSignatures ::=
                               BIT STRING {
                                   signature15(0),
                                   signature14(1),
                                   signature13(2),
                                   signature12(3),
                                   signature11(4),
                                   signature10(5),
                                   signature9(6),
                                   signature8(7),
                                   signature7(8),
                                   signature6(9),
                                   signature5(10),
                                   signature4(11),
                                   signature3(12),
                                   signature2(13),
                                   signature1(14),
                                   signature0(15)
                                        (SIZE(16))
                                   }
AvailableSubChannelNumbers ::=
                                   BIT STRING {
                                      subCh11(0),
                                       subCh10(1),
                                       subCh9(2),
                                       subCh8(3),
                                       subCh7(4),
                                      subCh6(5),
                                       subCh5(6),
                                       subCh4(7),
                                       subCh3(8),
                                       subCh2(9),
                                       subCh1(10),
                                       subCh0(11)
                                           (SIZE(12))
BEACON-PL-Est ::=
                                   ENUMERATED { true }
BurstType ::=
                                   ENUMERATED {
                                      type1, type2 }
-- Actual value Bler-Target = IE value * 0.05
Bler-Target ::=
                                  INTEGER (-63..0)
CCTrCH-PowerControlInfo ::=
                                 SEQUENCE {
                                      TFCS-Identity
   tfcs-Identity
                                                                         OPTIONAL.
   ul-DPCH-PowerControlInfo
                                      UL-DPCH-PowerControlInfo
CCTrCH-PowerControlInfo-r4 ::=
                                 SEQUENCE {
                                      TFCS-Identity
                                                                          OPTIONAL,
   tfcs-Identity
   ul-DPCH-PowerControlInfo
                                      UL-DPCH-PowerControlInfo-r4
CCTrCH-PowerControlInfo-r5 ::= SEQUENCE {
   tfcs-Identity
                                      TFCS-Identity
                                                                          OPTIONAL,
   ul-DPCH-PowerControlInfo
                                      UL-DPCH-PowerControlInfo-r5
}
CCTrCH-PowerControlInfo-r7 ::=
                                 SEQUENCE {
                                      TFCS-Identity
                                                                         OPTIONAL,
   tfcs-Identity
   ul-DPCH-PowerControlInfo
                                       UL-DPCH-PowerControlInfo-r7
}
CD-AccessSlotSubchannel ::=
                                  INTEGER (0..11)
CD-AccessSlotSubchannelList ::=
                                  SEQUENCE (SIZE (1..maxPCPCH-CDsubCh)) OF
                                       CD-AccessSlotSubchannel
CD-CA-ICH-ChannelisationCode ::= INTEGER (0..255)
CD-PreambleScramblingCode ::=
                                  INTEGER (0..79)
CD-SignatureCode ::=
                                   INTEGER (0..15)
CD-SignatureCodeList ::=
                                  SEQUENCE (SIZE (1..maxPCPCH-CDsig)) OF
                                       CD-SignatureCode
```

```
CellAndChannelIdentity ::= SEQUENCE {
   -- burstType may be set to either value and should be ignored by the receiver for 1.28 Mcps TDD.
                                     BurstType,
   burstType
   midambleShift
                                      MidambleShiftLong,
   timeslot
                                      TimeslotNumber,
   cellParametersID
                                      CellParametersID
CellParametersID ::=
                                 INTEGER (0..127)
Cfntargetsfnframeoffset ::=
                                     INTEGER (0..255)
ChannelAssignmentActive ::= CHOICE {
   notActive
                                     NULL,
   isActive
                                      AvailableMinimumSF-ListVCAM
}
                                 INTEGER (0..255)
ChannelisationCode256 ::=
ChannelReqParamsForUCSM ::=
                                 SEQUENCE {
                                  AvailableAP-SignatureList,
   availableAP-SignatureList
   availableAP-SubchannelList
                                      AvailableAP-SubchannelList
                                                                 OPTIONAL
}
ClosedLoopTimingAdjMode ::=
                                  ENUMERATED {
                                     slot1, slot2 }
CodeNumberDSCH ::=
                                  INTEGER (0..255)
CodeRange ::=
                                  SEQUENCE {
                                     PDSCH-CodeMapList
   pdsch-CodeMapList
                                  ENUMERATED {
CodeWordSet ::=
                                      longCWS
                                      mediumCWS,
                                      shortCWS,
                                      ssdtOff }
CommonTimeslotInfo ::=
                                  SEQUENCE {
   -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
   -- bit it is not defined as OPTIONAL.
   secondInterleavingMode
tfci-Coding
                                      SecondInterleavingMode,
                                     TFCI-Coding
                                                                        OPTIONAL,
   puncturingLimit
                                      PuncturingLimit,
   repetitionPeriodAndLength
                                     RepetitionPeriodAndLength
                                                                        OPTIONAL
}
CommonTimeslotInfoMBMS ::=
                                 SEQUENCE {
   -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
   -- bit it is not defined as {\tt OPTIONAL}\,.
   secondInterleavingMode
                                     SecondInterleavingMode,
                                      TFCI-Coding
                                                                        OPTIONAL,
   tfci-Coding
                                      PuncturingLimit
   puncturingLimit
}
CommonTimeslotInfoSCCPCH ::=
                                 SEQUENCE {
   -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
   -- bit it is not defined as OPTIONAL.
   secondInterleavingMode
tfci-Coding
                                     SecondInterleavingMode,
                                      TFCI-Coding
                                                                        OPTIONAL,
                                    PuncturingLimit,
   puncturingLimit
   repetitionPeriodLengthAndOffset RepetitionPeriodLengthAndOffset
                                                                       OPTIONAL
}
ConstantValue ::=
                                  INTEGER (-35..-10)
ConstantValueTdd ::=
                                  INTEGER (-35..10)
CPCH-PersistenceLevels ::=
                                  SEQUENCE {
   cpch-SetID
                                      CPCH-SetID,
   dynamicPersistenceLevelTF-List
                                      DynamicPersistenceLevelTF-List
}
                                  SEQUENCE (SIZE (1..maxCPCHsets)) OF
CPCH-PersistenceLevelsList ::=
                                      CPCH-PersistenceLevels
```

```
CPCH-SetInfo ::=
                                     SEQUENCE {
                                         CPCH-SetID,
    cpch-SetID
    transportFormatSet
                                         TransportFormatSet,
                                         TFCS,
    tfcs
    ap-PreambleScramblingCode
                                        AP-PreambleScramblingCode,
    ap-AICH-ChannelisationCode
                                       AP-AICH-ChannelisationCode,
    cd-PreambleScramblingCode
                                        CD-PreambleScramblingCode,
   cd-PreambleScramblingCode
cd-CA-ICH-ChannelisationCode
cd-AccessSlotSubchannelList
cd-SignatureCodeList
                                        CD-CA-ICH-ChannelisationCode,
                                        CD-AccessSlotSubchannelList
                                                                              OPTIONAL,
    cd-SignatureCodeList
                                         CD-SignatureCodeList
                                                                               OPTIONAL,
    deltaPp-m
                                        DeltaPp-m,
   ul-DPCCH-SlotFormat
                                         UL-DPCCH-SlotFormat,
   n-StartMessage
                                         N-StartMessage,
   n-EOT
                                        N-EOT,
    -- TABULAR: VCAM info has been nested inside ChannelAssignmentActive,
    -- which in turn is mandatory since it's only a binary choice.
   cpch-StatusIndicationMode
pcpch-ChannelInfoList
    channelAssignmentActive
                                        ChannelAssignmentActive,
                                        CPCH-StatusIndicationMode,
                                       PCPCH-ChannelInfoList
}
                                    SEQUENCE (SIZE (1..maxCPCHsets)) OF
CPCH-SetInfoList ::=
                                         CPCH-SetInfo
CPCH-StatusIndicationMode ::=
                                     ENUMERATED {
                                         pa-mode,
                                         pamsf-mode }
                                     ENUMERATED {
CQI-DTX-Timer ::=
                                         sub-frames-0,
                                         sub-frames-1,
                                         sub-frames-2,
                                         sub-frames-4,
                                         sub-frames-8.
                                         sub-frames-16,
                                         sub-frames-32,
                                         sub-frames-64,
                                         sub-frames-128,
                                         sub-frames-256,
                                         sub-frames-512,
                                         sub-frames-Infinity,
                                         spare4,
                                         spare3,
                                         spare2,
                                         spare1 }
                                    INTEGER (1..4)
CQI-RepetitionFactor ::=
CSICH-PowerOffset ::=
                                     INTEGER (-10..5)
-- DefaultDPCH-OffsetValueFDD and DefaultDPCH-OffsetValueTDD corresponds to
-- IE "Default DPCH Offset Value" depending on the mode.
-- Actual value DefaultDPCH-OffsetValueFDD = IE value * 512
DefaultDPCH-OffsetValueFDD ::=
                                    INTEGER (0..599)
DefaultDPCH-OffsetValueTDD ::=
                                    INTEGER (0..7)
DeltaPp-m ::=
                                     INTEGER (-10..10)
                                     INTEGER (0..8)
DeltaCOT ··=
DeltaNACK ::=
                                     INTEGER (0..8)
DeltaACK ::=
                                     INTEGER (0..8)
-- Actual value DeltaSIR = IE value * 0.1
DeltaSIR ::=
                                     INTEGER (0..30)
                                     INTEGER (-20..10)
DHS-Sync ::=
DL-CCTrCh ::=
                                     SEQUENCE {
                                         TFCS-IdentityPlain
   tfcs-ID
                                                                              DEFAULT 1,
                                         TimeInfo,
    timeInfo
    commonTimeslotInfo
                                         CommonTimeslotInfo
                                                                              OPTIONAL.
   dl-CCTrCH-TimeslotsCodes
                                        DownlinkTimeslotsCodes
                                                                              OPTIONAL.
   ul-CCTrChTPCList
                                        UL-CCTrChTPCList
                                                                               OPTIONAL
}
```

```
DL-CCTrCh-r4 ::=
                                   SEQUENCE {
                                       TFCS-IdentityPlain
    tfcs-ID
                                                                          DEFAULT 1,
    timeInfo
                                       TimeInfo,
    commonTimeslotInfo
                                       CommonTimeslotInfo
                                                                          OPTIONAL.
    tddOption
                                       CHOICE {
       tdd384
                                           SEQUENCE {
           dl-CCTrCH-TimeslotsCodes
                                               DownlinkTimeslotsCodes OPTIONAL
        tdd128
                                           SEQUENCE {
           dl-CCTrCH-TimeslotsCodes
                                             DownlinkTimeslotsCodes-LCR-r4 OPTIONAL
    ul-CCTrChTPCList
                                     UL-CCTrChTPCList OPTIONAL
}
DL-CCTrCh-r7 ::=
                                   SEOUENCE {
    tfcs-ID
                                       TFCS-IdentityPlain
                                                                           DEFAULT 1.
    timeInfo
                                       TimeInfo,
    commonTimeslotInfo
                                       CommonTimeslotInfo
                                                                           OPTIONAL.
                                       CHOICE {
    tddOption
                                           SEQUENCE {
        tdd384
           dl-CCTrCH-TimeslotsCodes
                                              DownlinkTimeslotsCodes-r7 OPTIONAL
                                           SEQUENCE {
        tdd768
                                              DownlinkTimeslotsCodes-VHCR
           dl-CCTrCH-TimeslotsCodes
                                                                              OPTIONAL
        tdd128
                                           SEQUENCE {
           dl-CCTrCH-TimeslotsCodes
                                               DownlinkTimeslotsCodes-LCR-r4 OPTIONAL
    ul-CCTrChTPCList
                                       UL-CCTrChTPCList
                                                              OPTIONAL
DL-CCTrChList ::=
                                   SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                       DL-CCTrCh
                                   SEOUENCE (SIZE (1..maxCCTrCH)) OF
DI-CCTrChList-r7 ··=
                                       DL-CCTrCh-r7
DL-CCTrChList-r4 ::=
                                   SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                       DL-CCTrCh-r4
DL-CCTrChListToRemove ::=
                                   SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                       TFCS-IdentityPlain
DL-ChannelisationCode ::=
                                   SEQUENCE {
    secondaryScramblingCode
                                      SecondaryScramblingCode
                                                                          OPTIONAL,
    sf-AndCodeNumber
                                       SF512-AndCodeNumber,
                                       ScramblingCodeChange
    scramblingCodeChange
}
                                   SEQUENCE (SIZE (1..maxDPCH-DLchan)) OF
DL-ChannelisationCodeList ::=
                                       DL-ChannelisationCode
DL-CommonInformation ::=
                                   SEQUENCE {
                                       DL-DPCH-InfoCommon
    dl-DPCH-InfoCommon
                                                                  OPTIONAL,
    modeSpecificInfo
                                       CHOICE {
                                         SEQUENCE {
       fdd
                                               DefaultDPCH-OffsetValueFDD OPTIONAL,
           defaultDPCH-OffsetValue
           dpch-CompressedModeInfo
                                               DPCH-CompressedModeInfo
                                                                           OPTIONAL,
           tx-DiversityMode
                                               TX-DiversityMode
                                                                           OPTIONAL,
           -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
                                               SSDT-Information
           dummy
                                                                          OPTIONAL
                                          SEQUENCE {
        t.dd
           defaultDPCH-OffsetValue
                                              DefaultDPCH-OffsetValueTDD OPTIONAL
    }
}
DL-CommonInformation-r4 ::=
                                   SECUENCE {
    dl-DPCH-InfoCommon
                                      DL-DPCH-InfoCommon-r4
                                                                  OPTIONAL,
    modeSpecificInfo
                                       CHOICE {
                                           SEQUENCE {
           defaultDPCH-OffsetValue
                                               DefaultDPCH-OffsetValueFDD OPTIONAL,
           dpch-CompressedModeInfo
                                               DPCH-CompressedModeInfo OPTIONAL,
           tx-DiversityMode
                                               TX-DiversityMode
                                                                           OPTIONAL.
```

```
-- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
           dummv
                                               SSDT-Information-r4
        },
        tdd
                                           SEQUENCE {
           tddOption
                                               CHOICE {
               tdd384
                                                   NULL,
                                                   SEQUENCE {
               tdd128
                   tstd-Indicator
                                                       BOOLEAN
           defaultDPCH-OffsetValue
                                    DefaultDPCH-OffsetValueTDD OPTIONAL
       }
   }
}
DL-CommonInformation-r5 ::=
                                 SEQUENCE {
    dl-DPCH-InfoCommon
                                      DL-DPCH-InfoCommon-r4 OPTIONAL,
                                       CHOICE {
    modeSpecificInfo
                                        SEQUENCE {
       fdd
           defaultDPCH-OffsetValue
                                              DefaultDPCH-OffsetValueFDD OPTIONAL,
           dpch-CompressedModeInfo
                                               DPCH-CompressedModeInfo OPTIONAL,
                                                                           OPTIONAL,
           tx-DiversityMode
                                              TX-DiversityMode
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
                                               SSDT-Information-r4
        },
                                           SEQUENCE {
        t.dd
           tddOption
                                               CHOICE {
                                                   NULL,
               tdd384
               tdd128
                                                   SEQUENCE {
                   tstd-Indicator
                                                       BOOLEAN
           defaultDPCH-OffsetValue
                                               DefaultDPCH-OffsetValueTDD OPTIONAL
    mac-hsResetIndicator
                                      ENUMERATED { true }
}
DL-CommonInformation-r6 ::=
                                  SEQUENCE {
                                   CHOICE {
    dl-dpchInfoCommon
        dl-DPCH-InfoCommon
                                           DL-DPCH-InfoCommon-r6,
       dl-FDPCH-InfoCommon
                                           DL-FDPCH-InfoCommon-r6
                                                                          OPTIONAL,
    modeSpecificInfo
                                      CHOICE {
                                       SEQUENCE {
       fdd
           defaultDPCH-OffsetValue
dpch-CompressedModeInfo
                                             DefaultDPCH-OffsetValueFDD OPTIONAL,
                                               DPCH-CompressedModeInfo OPTIONAL, TX-DiversityMode OPTIONAL
           tx-DiversityMode
                                               TX-DiversityMode
        },
                                           SEQUENCE {
        t.dd
                                               CHOICE {
           tddOption
               tdd384
                                                   NULL,
               tdd128
                                                   SEQUENCE {
                   tstd-Indicator
                                                       BOOLEAN
           defaultDPCH-OffsetValue
                                             DefaultDPCH-OffsetValueTDD OPTIONAL
    mac-hsResetIndicator
                                       ENUMERATED { true }
                                                                   OPTIONAL,
                                       ENUMERATED { true }
   postVerificationPeriod
}
DL-CommonInformation-r7 ::=
                                  SEQUENCE {
    dl-dpchInfoCommon
                                   CHOICE {
       dl-DPCH-InfoCommon
                                        DL-DPCH-InfoCommon-r6,
        dl-FDPCH-InfoCommon
                                           DL-FDPCH-InfoCommon-r6
                                                                          OPTIONAL.
    modeSpecificInfo
                                      CHOICE {
                                       SEQUENCE {
       fdd
           defaultDPCH-OffsetValue
                                            DefaultDPCH-OffsetValueFDD OPTIONAL,
           dpch-CompressedModeInfo
                                               DPCH-CompressedModeInfo OPTIONAL,
           tx-DiversityMode
                                               TX-DiversityMode
                                                                           OPTIONAL
        },
        tdd
                                           SEQUENCE {
```

```
tddOption
                                                                                             CHOICE {
                               tdd384
                                                                                                    NULL,
                               tdd768
                                                                                                    NULL,
                              tdd128
                                                                                                    SEQUENCE {
                                      tstd-Indicator
                                                                                                            BOOLEAN
                       defaultDPCH-OffsetValue
                                                                             DefaultDPCH-OffsetValueTDD OPTIONAL
               }
       postVerificationPeriod
                                                                            ENUMERATED { true }
                                                                                                                                   OPTIONAL,
                                                                            ENUMERATED { true }
                                                                                                                                   OPTIONAL
}
DL-CommonInformationPost ::=
                                                                  SEQUENCE {
                                                                          DL-DPCH-InfoCommonPost
      dl-DPCH-InfoCommon
{\tt DL-CommonInformationPredef::=} \qquad {\tt SEQUENCE} \ \big\{
       dl-DPCH-InfoCommon
                                                                         DL-DPCH-InfoCommonPredef OPTIONAL
DL-CompressedModeMethod ::= ENUMERATED {
               -- dummy is not used in this version of the specification, it should
                -- not be sent and if received the UE behaviour is not specified.
                                                                              dummy, sf-2,
                                                                              higherLayerScheduling }
DL-DPCH-InfoCommon ::=
                                                                      SEQUENCE {
                                                                              CHOICE {
       cfnHandling
               maintain
                                                                                     NULL,
                                                                                     SEQUENCE {
                        -- IE dummy is not used in this version of the specification
                       -- The IE should not be sent and if received it should be ignored
                                                                                                                                                                   OPTIONAL
                       dummy
                                                                                             Cfntargetsfnframeoffset
       modeSpecificInfo
                                                                              CHOICE {
                      SEQUENCE {

dl-DPCH-PowerControlInfo
 powerOffsetPilot-pdpdch
 dl-rate-matching-restriction

SEQUENCE {

DL-DPCH-PowerControlInfo
 PowerOffsetPilot-pdpdch,
 Dl-rate-matching-restriction
               fdd
                                                                                                                                                                   OPTIONAL,
                       -- TABULAR: The number of pilot bits is nested inside the spreading factor.
                      spreadingFactorAndPilot SF512-AndPilot, positionFixedOrFlexible PositionFixedOr
                                                                                             PositionFixedOrFlexible,
                       tfci-Existence
                                                                                             BOOLEAN
               },
               tdd
                                                                                  SEQUENCE {
                       dl-DPCH-PowerControlInfo
                                                                                          DL-DPCH-PowerControlInfo
                                                                                                                                                OPTIONAL
               }
       }
}
DL-DPCH-InfoCommon-r4 ::=
                                                                      SEQUENCE {
       cfnHandling
                                                                              CHOICE {
                                                                                     NULL,
               maintain
                                                                                     SEQUENCE {
                      -- IE dummy is not used in this version of the specification
                        -- The IE should not be sent and if received it should be ignored
                       dummy
                                                                                             Cfntargetsfnframeoffset
                                                                                                                                                                  OPTIONAL
               }
       modeSpecificInfo
                                                                              CHOICE {
                                                                             SEQUENCE {
                      DL-DPCH-PowerControlInfo
powerOffsetPilot-pdpdch
dl-rate-matching-restriction
-- TABULAR: The number of the control of the con
                                                                                                                                                                  OPTIONAL,
                                                                                             Dl-rate-matching-restriction
                       -- TABULAR: The number of pilot bits is nested inside the spreading factor.
                       spreadingFactorAndPilot SF512-AndPilot,
                       positionFixedOrFlexible
                                                                                             PositionFixedOrFlexible,
                       tfci-Existence
                                                                                           BOOLEAN
                                                                                    SEQUENCE {
               tdd
                                                                                            DL-DPCH-PowerControlInfo
                       dl-DPCH-PowerControlInfo
                                                                                                                                                                  OPTIONAL
-- The IE mac-d-HFN-initial-value should be absent in the RRCConnectionSetup-r4-IEs or
-- RRCConnectionSetup-r5-IEs or HandoverToUTRANCommand-r4-IEs or HandoverToUTRANCommand-r5-IEs and
```

```
-- if the IE is included, the general error handling for conditional IEs applies.
   mac-d-HFN-initial-value
                                      MAC-d-HFN-initial-value
}
DL-DPCH-InfoCommon-r6 ::=
                                       SEQUENCE {
   cfnHandling
                                          CHOICE {
                                              SEQUENCE {
       maintain
           timingmaintainedsynchind
                                                  TimingMaintainedSynchInd
                                                                                    OPTIONAL
       initialise
   modeSpecificInfo
                                           CHOICE {
       fdd
                                             SEQUENCE {
           dl-DPCH-PowerControlInfo
powerOffsetPilot-pdpdch
                                               DL-DPCH-PowerControlInfo
                                                                                     OPTIONAL,
                                                  PowerOffsetPilot-pdpdch,
           dl-rate-matching-restriction
                                                                               OPTIONAL,
                                                 Dl-rate-matching-restriction
           -- TABULAR: The number of pilot bits is nested inside the spreading factor.
                                                 SF512-AndPilot,
           spreadingFactorAndPilot
           positionFixedOrFlexible
                                                  PositionFixedOrFlexible,
                                                  BOOLEAN
           tfci-Existence
       tdd
                                          SEQUENCE {
                                              DL-DPCH-PowerControlInfo
           dl-DPCH-PowerControlInfo
       }
    -- The IE mac-d-HFN-initial-value should be absent in the RRCConnectionSetup and the
   -- HandoverToUTRANCommand messages. If the IE is included, the general error handling
   -- for conditional IEs applies.
   mac-d-HFN-initial-value
                                      MAC-d-HFN-initial-value
                                                                        OPTIONAL
}
DL-DPCH-InfoCommonPost ::= SEQUENCE { dl-DPCH-PowerControlInfo DL-DPCI
                                      DL-DPCH-PowerControlInfo
                                                                            OPTIONAL
}
                                 SEQUENCE {
DL-DPCH-InfoCommonPredef ::=
                                   CHOICE {
   modeSpecificInfo
                                       SEQUENCE {
       fdd
           -- TABULAR: The number of pilot bits is nested inside the spreading factor.
           spreadingFactorAndPilot SF512-AndPilot,
           positionFixedOrFlexible
                                              PositionFixedOrFlexible,
                                             BOOLEAN
           tfci-Existence
       tdd
                                         SEQUENCE {
           commonTimeslotInfo
                                              CommonTimeslotInfo
   }
}
DL-DPCH-InfoPerRL ::=
                                  CHOICE {
                                   SEQUENCE {
   fdd
                                       PCPICH-UsageForChannelEst,
       pCPICH-UsageForChannelEst
                                          DPCH-FrameOffset,
       dpch-FrameOffset
       secondaryCPICH-Info
                                         SecondaryCPICH-Info
                                                                        OPTIONAL,
       dl-ChannelisationCodeList
                                          DL-ChannelisationCodeList,
                                          TPC-CombinationIndex,
       tpc-CombinationIndex
        -- dummy is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored.
                                          SSDT-CellIdentity
       dummy
                                                                         OPTIONAL.
       closedLoopTimingAdjMode
                                          ClosedLoopTimingAdjMode
                                                                         OPTIONAL
   tdd
                                      SEQUENCE {
       dl-CCTrChListToEstablish
                                          DL-CCTrChList
                                                                         OPTIONAL,
                                          DL-CCTrChListToRemove
       dl-CCTrChListToRemove
                                                                         OPTIONAL
}
DL-DPCH-InfoPerRL-r4 ::=
                                  CHOICE {
                                      SEQUENCE {
       pCPICH-UsageForChannelEst
                                       PCPICH-UsageForChannelEst,
       dpch-FrameOffset
                                          DPCH-FrameOffset,
       secondaryCPICH-Info
                                          SecondaryCPICH-Info
                                                                         OPTIONAL,
       dl-ChannelisationCodeList
                                         DL-ChannelisationCodeList,
       tpc-CombinationIndex
                                          TPC-CombinationIndex,
        -- dummy is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored.
                                          SSDT-CellIdentity
                                                                        OPTIONAL,
       dummy
```

```
closedLoopTimingAdjMode
                                           ClosedLoopTimingAdjMode
                                                                            OPTIONAL
    },
    tdd
                                       SEQUENCE {
        dl-CCTrChListToEstablish
                                           DL-CCTrChList-r4
                                                                            OPTIONAL,
        dl-CCTrChListToRemove
                                            DL-CCTrChListToRemove
                                                                            OPTIONAL
}
DL-DPCH-InfoPerRL-r5 ::=
                                    CHOICE {
    fdd
                                        SEQUENCE {
                                           PCPICH-UsageForChannelEst,
        pCPICH-UsageForChannelEst
                                            DPCH-FrameOffset,
        dpch-FrameOffset
        secondaryCPICH-Info
                                            SecondaryCPICH-Info
                                                                            OPTIONAL.
                                           DL-ChannelisationCodeList,
        dl-ChannelisationCodeList
        tpc-CombinationIndex
                                            TPC-CombinationIndex,
        powerOffsetTPC-pdpdch
                                           PowerOffsetTPC-pdpdch
                                                                            OPTIONAL,
        -- dummy is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored.
        dummy
                                            SSDT-CellIdentity
                                                                            OPTIONAL.
        closedLoopTimingAdjMode
                                            ClosedLoopTimingAdjMode
                                                                            OPTIONAL
    },
    tdd
                                        SEQUENCE {
        dl-CCTrChListToEstablish
                                            DL-CCTrChList-r4
                                                                            OPTIONAL,
        dl-CCTrChListToRemove
                                            DL-CCTrChListToRemove
                                                                            OPTIONAL
    }
}
DL-DPCH-InfoPerRL-r6 ::=
                                    CHOICE {
                                        SEQUENCE {
                                           PCPICH-UsageForChannelEst,
        pCPICH-UsageForChannelEst
        dpch-FrameOffset
                                            DPCH-FrameOffset,
        secondaryCPICH-Info
                                            SecondaryCPICH-Info
                                                                            OPTIONAL,
        dl-ChannelisationCodeList
                                            DL-ChannelisationCodeList,
        tpc-CombinationIndex
                                            TPC-CombinationIndex,
        powerOffsetTPC-pdpdch
                                            PowerOffsetTPC-pdpdch
                                                                            OPTIONAL,
        closedLoopTimingAdjMode
                                            ClosedLoopTimingAdjMode
                                                                            OPTIONAL
    },
                                       SEQUENCE {
    t dd
                                           DL-CCTrChList-r4
        dl-CCTrChListToEstablish
                                                                            OPTIONAL,
        dl-CCTrChListToRemove
                                            DL-CCTrChListToRemove
                                                                            OPTIONAL
    }
}
DL-DPCH-InfoPerRL-r7 ::=
                                    CHOICE {
                                        SEQUENCE {
        pCPICH-UsageForChannelEst
                                            PCPICH-UsageForChannelEst,
                                            DPCH-FrameOffset,
        dpch-FrameOffset
        secondaryCPICH-Info
                                           SecondaryCPICH-Info
                                                                            OPTIONAL,
        dl-ChannelisationCodeList
                                            DL-ChannelisationCodeList,
        tpc-CombinationIndex
                                           TPC-CombinationIndex,
        powerOffsetTPC-pdpdch
                                           PowerOffsetTPC-pdpdch
                                                                            OPTIONAL.
        closedLoopTimingAdjMode
                                           ClosedLoopTimingAdjMode
                                                                            OPTIONAL
    },
    tdd
                                        SEQUENCE {
        dl-CCTrChListToEstablish
                                           DL-CCTrChList-r7
                                                                            OPTIONAL.
        dl-CCTrChListToRemove
                                            DL-CCTrChListToRemove
                                                                            OPTIONAL
    }
}
DL-FDPCH-InfoPerRL-r6 ::=
                                    SEQUENCE {
    pCPICH-UsageForChannelEst
                                        PCPICH-UsageForChannelEst,
    fdpch-FrameOffset
                                        DPCH-FrameOffset,
    secondaryCPICH-Info
                                        SecondaryCPICH-Info
                                                                        OPTIONAL,
    secondaryScramblingCode
                                        SecondaryScramblingCode
                                                                        OPTIONAL,
    dl-ChannelisationCode
                                        INTEGER (0..255),
                                        TPC-CombinationIndex
    tpc-CombinationIndex
}
DL-FDPCH-InfoPerRL-r7 ::=
                                    SEQUENCE {
    pCPICH-UsageForChannelEst
                                        PCPICH-UsageForChannelEst,
    fdpch-FrameOffset
                                        DPCH-FrameOffset,
    fdpch-SlotFormat
                                        FDPCH-SlotFormat
                                                                        OPTIONAL.
    secondaryCPICH-Info
                                       SecondaryCPICH-Info
                                                                        OPTIONAL,
    secondaryScramblingCode
                                       SecondaryScramblingCode
                                                                        OPTIONAL,
    dl-ChannelisationCode
                                        INTEGER (0..255),
    tpc-CombinationIndex
                                       TPC-CombinationIndex,
    sttdIndication
                                       STTDIndication
                                                                        OPTIONAL
```

```
DL-DPCH-InfoPerRL-PostFDD ::=
                                                          SEQUENCE {
       -InfoPerRL-Postruc ..-
pCPICH-UsageForChannelEst
                                              PCPICH-UsageForChannelEst,
                                              DL-ChannelisationCode,
       dl-ChannelisationCode
       tpc-CombinationIndex
                                              TPC-CombinationIndex
}
DL-DPCH-InfoPerRL-PostTDD ::=
                                        SEQUENCE {
   dl-DPCH-TimeslotsCodes
                                              DownlinkTimeslotsCodes
DL-DPCH-InfoPerRL-PostTDD-LCR-r4 ::= SEQUENCE {
                                              DownlinkTimeslotsCodes-LCR-r4
   dl-CCTrCH-TimeslotsCodes
DL-DPCH-PowerControlInfo ::=
                                    SEQUENCE {
   modeSpecificInfo
                                          CHOICE {
       fdd
                                              SEQUENCE {
                                                 DPC-Mode
           dpc-Mode
                                              SEQUENCE {
       t.dd
           tpc-StepSizeTDD
                                                 TPC-StepSizeTDD
                                                                       OPTIONAL
   }
}
DL-FDPCH-InfoCommon-r6 ::=
                                  SEQUENCE {
   cfnHandling
                                      CHOICE {
                                          SEQUENCE {
       maintain
           timingmaintainedsynchind
                                              TimingMaintainedSynchInd
                                                                                OPTIONAL
       initialise
                                          NULL
   dl-FDPCH-PowerControlInfo
                                     DL-DPCH-PowerControlInfo
                                                                        OPTIONAL,
   -- Actual value dl-FDPCH-TPCcommandErrorRate = IE value * 0.01
   -- dl-FDPCH-TPCcommandErrorRate values 11..16 are spare and shall not be used in this version of
   -- the protocol.
    -- In addition, this IE shall always be included otherwise the UE behaviour is unspecified.
   dl-FDPCH-TPCcommandErrorRate
                                     INTEGER (1..16) OPTIONAL
DL-FrameType ::=
                                  ENUMERATED {
                                      dl-FrameTypeA, dl-FrameTypeB }
DL-HSPDSCH-Information ::=
                                  SEQUENCE {
   hs-scch-Info
                                  HS-SCCH-Info OPTIONAL,
   measurement-feedback-Info
                                  Measurement-Feedback-Info OPTIONAL,
   modeSpecificInfo
                                  CHOICE {
   tdd
                                  CHOICE{
                                          SEQUENCE {
              dl-HSPDSCH-TS-Configuration DL-HSPDSCH-TS-Configuration OPTIONAL
           tdd128
                                          SEQUENCE {
               hs-PDSCH-Midamble-Configuration-tdd128
                      HS-PDSCH-Midamble-Configuration-TDD128 OPTIONAL
       fdd
                                  NULL
   }
}
DL-HSPDSCH-Information-r6 ::= SEQUENCE {
                               HS-SCCH-Info-r6
   hs-scch-Info
                                                                         OPTIONAL,
   measurement-feedback-Info
                                  Measurement-Feedback-Info
                                                                         OPTIONAL.
   modeSpecificInfo
                                  CHOICE {
       t.dd
                                      CHOICE {
                                        SEQUENCE {
               dl-HSPDSCH-TS-Configuration
                                            DL-HSPDSCH-TS-Configuration OPTIONAL
           tdd128
                                          SEOUENCE {
               hs-PDSCH-Midamble-Configuration-tdd128
                      HS-PDSCH-Midamble-Configuration-TDD128
       fdd
                                 NULL
   }
}
```

```
DL-HSPDSCH-Information-r7 ::= SEQUENCE {
                                HS-SCCH-Info-r7
    hs-scch-Info
                                                                            OPTIONAL,
   measurement-feedback-Info
                                   Measurement-Feedback-Info-r7
                                                                           OPTIONAL,
    modeSpecificInfo
                                   CHOICE {
       tdd
                                       CHOICE {
            tdd384
                                          SEQUENCE {
               dl-HSPDSCH-TS-Configuration
                                               DL-HSPDSCH-TS-Configuration OPTIONAL
            tdd768
                                          SEQUENCE {
               dl-HSPDSCH-TS-Configuration
                                              DL-HSPDSCH-TS-Configuration-VHCR
                                                                                    OPTIONAL
            tdd128
                                           SEQUENCE {
               hs-PDSCH-Midamble-Configuration-tdd128
                       HS-PDSCH-Midamble-Configuration-TDD128
                                                                                    OPTIONAL,
                dl-MultiCarrier-Information DL-MultiCarrier-Information
                                                                                    OPTIONAL
            }
                                       SEQUENCE {
        fdd
            dl-64QAM-Configured
                                          ENUMERATED { true }
                                                                              OPTIONAL
    }
}
DL-HSPDSCH-MultiCarrier-Information ::= SEQUENCE (SIZE (1..maxTDD128Carrier)) OF
                                           SEOUENCE {
       uarfcn-Carrier
                                               HARFCN.
       harqInfo
                                               HARQ-Info
                                                                                        OPTIONAL.
        hs-PDSCH-Midamble-Configuration
                                               HS-PDSCH-Midamble-Configuration-TDD128 OPTIONAL,
                                               SEQUENCE (SIZE (1..maxHSSCCHs)) OF
       hs-SCCH-TDD128-MultiCarrier
                                                   HS-SCCH-TDD128-MultiCarrier
                                                                                       OPTIONAL.
    }
-- The IE 'DL-HSPDSCH-TS-Configuration' applies to tdd-384 REL-5 onward
{\tt DL-HSPDSCH-TS-Configuration} ::= \\ {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxTS-1})) \ {\tt OF} \\
                                       SEQUENCE {
    timeslot
                                           TimeslotNumber,
   midambleShiftAndBurstType
                                           MidambleShiftAndBurstType-DL
}
-- The IE 'DL-HSPDSCH-TS-Configuration-VHCR' applies to tdd-768 REL-7 onward
DL-HSPDSCH-TS-Configuration-VHCR ::= SEQUENCE (SIZE (1..maxTS-1)) OF
                                       SEQUENCE {
                                           TimeslotNumber,
    timeslot
    midambleShiftAndBurstType
                                           MidambleShiftAndBurstType-DL-VHCR
}
DL-InformationPerRL ::=
                                   SEQUENCE {
                                    CHOICE {
   modeSpecificInfo
        fdd
                                        SEQUENCE {
           primaryCPICH-Info
                                               PrimaryCPICH-Info,
            -- dummy1 and dummy 2 are not used in this version of specification, they should
            -- not be sent and if received they should be ignored.
            dummy1
                                               PDSCH-SHO-DCH-Info
                                                                           OPTIONAL.
                                                PDSCH-CodeMapping
                                                                           OPTIONAL
            dummy2
        },
        t.dd
                                           PrimaryCCPCH-Info
                                       DL-DPCH-InfoPerRL
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
                                       SCCPCH-InfoForFACH
                                                                           OPTIONAL
    dummy
                                   SEQUENCE {
DL-InformationPerRL-r4 ::=
                                       CHOICE {
    modeSpecificInfo
        fdd
                                          SEQUENCE {
                                               PrimaryCPICH-Info,
           primaryCPICH-Info
            -- dummy1 and dummy 2 are not used in this version of specification, they should
            -- not be sent and if received they should be ignored.
            dummy1
                                               PDSCH-SHO-DCH-Info
                                                                            OPTIONAL.
                                                PDSCH-CodeMapping
            dummv2
                                                                           OPTIONAL
        }.
                                           PrimaryCCPCH-Info-r4
       tdd
    dl-DPCH-InfoPerRL
                                       DL-DPCH-InfoPerRL-r4
                                                                           OPTIONAL.
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
                                       SCCPCH-InfoForFACH-r4
    dummy
                                                                           OPTIONAL.
```

```
cell-id
                                           CellIdentity
                                                                                      OPTIONAL
}
DL-InformationPerRL-r5 ::= SEQUENCE { modeSpecificInfo CHOICE
             fdd
                                                      PrimaryCPICH-Info,
             -- dummy1 and dummy 2 are not used in this version of specification, they should
             -- not be sent and if received they should be ignored.
                                             PDSCH-SHO-DCH-Info
PDSCH-CodeMapping
             dummv1
                                                                                 OPTIONAL,
             dummy2
             servingHSDSCH-RL-indicator
                                                     BOOLEAN
         },
         tdd
                                                PrimaryCCPCH-Info-r4
    dl-DPCH-InfoPerRL
                                            DL-DPCH-InfoPerRL-r5
                                                                                     OPTIONAL,
    -- dummy is not used in this version of the specification, it should
     \mbox{--} not be sent and if received it should be ignored.
                                             hould be ignored.

SCCPCH-InfoForFACH-r4

OPTIONAL,
    dummy
                                                                                     OPTIONAL
    cell-id
                                             CellIdentity
}
DL-InformationPerRL-r5bis ::= SEQUENCE {
             cificInfo CHOICE {
SEQUENCE {
primaryCPICH-Info PrimaryCPICH-Info,
-- dummy1 and dummy 2 are not used in this version of specification, they should
    modeSpecificInfo
         fdd
                                                     PDSCH-CodeMapping OPTIONAL,
             -- not be sent and if received they should be ignored.
             dummv2
         },
         tdd
                                                PrimaryCCPCH-Info-r4
    dl-DPCH-InfoPerRL
                                            DL-DPCH-InfoPerRL-r5
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
                                             SCCPCH-InfoForFACH-r4 OPTIONAL,
CellIdentity
    dummy
    cell-id
                                             CellIdentity
}
DL-InformationPerRL-r6 ::= SEQUENCE {
   modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      primaryCPICH-Info Primary
             primaryCPICH-Info PrimaryCPICH-Info, servingHSDSCH-RL-indicator BOOLEAN, servingEDCH-RL-indicator BOOLEAN
         },
                                                PrimaryCCPCH-Info-r4
         tdd
        dl-DPCH-InfoPerRL DL-DI
dl-FDPCH-InfoPerRL
    dl-dpchInfo
                                             DL-DPCH-InfoPerRL-r6,
                                                  DL-FDPCH-InfoPerRL-r6
        GCH-Information
ICH-Info
e-HICH-Information
releaseIndicator
                                                                                      OPTIONAL.
                                      E-AGCH-Information
    e-AGCH-Information
                                                                                      OPTIONAL,
    e-HICH-Info
                                            CHOICE {
                                              E-HICH-Information,
         releaseIndicator
                                                 NULL
        OPTIONAL,
        GCH-Info CHOICE {
e-RGCH-Information E-RGCH
releaseIndicator
    e-RGCH-Info
                                            E-RGCH-Information,
        OPTIONAL,
    cell-id
                                            CellIdentity
                                                                                     OPTIONAL
}
DL-InformationPerRL-v6b0ext ::= SEQUENCE \{
                                         STTDIndication
                                                                                     OPTIONAL
        sttdIndication
DL-InformationPerRL-r7 ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            primaryCPICH-Info PrimaryCPICH-Info, servingHSDSCH-RL-indicator BOOLEAN, servingEDCH-RL-indicator BOOLEAN
         tdd
                                                PrimaryCCPCH-Info-r4
    },
```

```
dl-dpchInfo
                                      CHOICE {
                                          DL-DPCH-InfoPerRL-r7,
       dl-DPCH-InfoPerRL
       dl-FDPCH-InfoPerRL
                                          DL-FDPCH-InfoPerRL-r7
                                                                         OPTIONAL.
    e-AGCH-Information
                                      E-AGCH-Information-r7
                                                                          OPTIONAL,
                                       CHOICE {
   modeSpecificInfo2
       fdd
                                          SEQUENCE {
           e-HICH-Info
                                               CHOICE {
               e-HICH-Information
                                                  E-HICH-Information,
               releaseIndicator
                                                  NULL
              OPTIONAL,
                                              CHOICE {
           e-RGCH-Info
                                                  E-RGCH-Information,
               e-RGCH-Information
               releaseIndicator
                                                  NULL
               OPTIONAL
       },
       tdd.
                                           CHOICE {
           tdd384-tdd768
                                              SEOUENCE {
               e-HICH-Info
                                                  E-HICH-Information-TDD384-768 OPTIONAL
           t.dd128
                                              SEQUENCE {
               e-HICH-Info
                                                  E-HICH-Information-TDD128 OPTIONAL
       }
   cell-id
                                      CellIdentity
                                                                         OPTIONAL
DL-InformationPerRL-List ::=
                                   SEQUENCE (SIZE (1..maxRL)) OF
                                      DL-InformationPerRL
DL-InformationPerRL-List-r4 ::=
                                   SEQUENCE (SIZE (1..maxRL)) OF
                                      DL-InformationPerRL-r4
                                   SEQUENCE (SIZE (1..maxRL)) OF
DL-InformationPerRL-List-r5 ::=
                                       DL-InformationPerRL-r5
                                   SEQUENCE (SIZE (1..maxRL)) OF
DL-InformationPerRL-List-r6 ::=
                                       DL-InformationPerRL-r6
DL-InformationPerRL-List-v6b0ext ::= SEQUENCE (SIZE (1..maxRL)) OF
                                      DL-InformationPerRL-v6b0ext
DL-InformationPerRL-List-r5bis ::=
                                      SEQUENCE (SIZE (1..maxRL)) OF
                                          DL-InformationPerRL-r5bis
DL-InformationPerRL-List-r7 ::= SEQUENCE (SIZE (1..maxRL)) OF
                                       DL-InformationPerRL-r7
DL-InformationPerRL-ListPostFDD ::= SEQUENCE (SIZE (1..maxRL)) OF
                                       DL-InformationPerRL-PostFDD
                                   SEQUENCE {
DL-InformationPerRL-PostFDD ::=
           primaryCPICH-Info
                                              PrimaryCPICH-Info,
   dl-DPCH-InfoPerRL
                                       DL-DPCH-InfoPerRL-PostFDD
}
DL-InformationPerRL-PostTDD ::= SEQUENCE {
   primaryCCPCH-Info
                                       PrimaryCCPCH-InfoPost,
   dl-DPCH-InfoPerRI
                                      DI.-DPCH-InfoPerRI.-PostTDD
}
DL-InformationPerRL-PostTDD-LCR-r4 ::= SEQUENCE {
   primaryCCPCH-Info
                                       PrimaryCCPCH-InfoPostTDD-LCR-r4,
   dl-DPCH-InfoPerRL
                                       DL-DPCH-InfoPerRL-PostTDD-LCR-r4
--for 1.28Mcps TDD Multi-Carrier
DL-MultiCarrier-Information ::=
                                   SEOUENCE {
                                                                           OPTIONAL,
                                      ENUMERATED { tsn-6bits, tsn-9bits }
   tsn-Length
   multiCarrierNumber
                                       INTEGER (1..maxTDD128Carrier)
   dl-HSPDSCH-MultiCarrier-Information DL-HSPDSCH-MultiCarrier-Information
                                                                             OPTIONAL
}
DL-PDSCH-Information ::=
                                  SEQUENCE {
   -- dummy1 and dummy 2 are not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
                                                                         OPTIONAL,
   dummy1
                                      PDSCH-SHO-DCH-Info
```

```
dummy2
                                         PDSCH-CodeMapping
                                                                               OPTIONAL
}
Dl-rate-matching-restriction ::= SEQUENCE {
    restrictedTrCH-InfoList
                                         RestrictedTrCH-InfoList
                                                                              OPTIONAL
DL-TPC-PowerOffsetPerRL ::= SEQUENCE {
       powerOffsetTPC-pdpdch
                                              PowerOffsetTPC-pdpdch
                                                                              OPTIONAL
}
-- NOTE: The radio links in the following list have a one-to-one mapping with the
-- radio links in the message.
DL-TPC-PowerOffsetPerRL-List ::=
                                   SEQUENCE (SIZE (1..maxRL)) OF
                                         DL-TPC-PowerOffsetPerRL
                                     ENUMERATED {
DL-TS-ChannelisationCode ::=
                                         cc16-1, cc16-2, cc16-3, cc16-4,
                                         cc16-5, cc16-6, cc16-7, cc16-8,
                                         cc16-9, cc16-10, cc16-11, cc16-12,
cc16-13, cc16-14, cc16-15, cc16-16 }
DL-TS-ChannelisationCode-VHCR ::=
                                     ENUMERATED {
                                         cc32-1, cc32-2, cc32-3, cc32-4,
                                         cc132-5, cc32-6, cc32-7, cc32-8, cc32-9, cc32-10, cc32-11, cc32-12,
                                          cc32-13, cc32-14, cc32-15, cc32-16,
                                          cc32-17, cc32-18, cc32-19, cc32-20,
                                         cc32-21, cc32-22, cc32-23, cc32-24,
                                          cc32-25, cc32-26, cc32-27, cc32-28,
                                          cc32-29, cc32-30, cc32-31, cc32-32 }
DL-TS-ChannelisationCodesShort ::= SEQUENCE {
                                         CHOICE {
    codesRepresentation
        consecutive
                                             SEQUENCE {
            firstChannelisationCode
                                                 DL-TS-ChannelisationCode,
            lastChannelisationCode
                                                  DL-TS-ChannelisationCode
        bitmap
                                             BIT STRING {
                                                  chCode16-SF16(0),
                                                  chCode15-SF16(1),
                                                  chCode14-SF16(2),
                                                  chCode13-SF16(3),
                                                  chCode12-SF16(4),
                                                  chCode11-SF16(5),
                                                  chCode10-SF16(6),
                                                  chCode9-SF16(7),
                                                  chCode8-SF16(8),
                                                  chCode7-SF16(9),
                                                  chCode6-SF16(10),
                                                  chCode5-SF16(11),
                                                  chCode4-SF16(12),
                                                  chCode3-SF16(13),
                                                  chCode2-SF16(14),
                                                  chCode1-SF16(15)
                                                      (SIZE (16))
DL-TS-ChannelisationCodesShort-VHCR ::= SEQUENCE {
                                         CHOICE {
    codesRepresentation
        consecutive
                                             SEQUENCE {
            firstChannelisationCode
                                                 DL-TS-ChannelisationCode-VHCR,
            lastChannelisationCode
                                                  DL-TS-ChannelisationCode-VHCR
        bitmap
                                             BIT STRING {
                                                  chCode32-SF32(0),
                                                  chCode31-SF32(1),
                                                  chCode30-SF32(2),
                                                  chCode29-SF32(3),
                                                  chCode28-SF32(4),
                                                  chCode27-SF32(5),
                                                  chCode26-SF32(6),
                                                  chCode25-SF32(7),
                                                  chCode24-SF32(8),
                                                  chCode23-SF32(9),
                                                  chCode22-SF32(10).
                                                  chCode21-SF32(11),
```

```
chCode20-SF32(12),
                                                 chCode19-SF32(13),
                                                chCode18-SF32(14),
                                                 chCode17-SF32(15),
                                                chCode16-SF32(16),
                                                 chCode15-SF32(17),
                                                chCode14-SF32(18),
                                                chCode13-SF32(19),
                                                 chCode12-SF32(20),
                                                 chCode11-SF32(21),
                                                chCode10-SF32(22),
                                                chCode9-SF32(23),
                                                chCode8-SF32(24),
                                                 chCode7-SF32(25),
                                                chCode6-SF32(26),
                                                chCode5-SF32(27),
                                                 chCode4-SF32(28),
                                                chCode3-SF32(29),
                                                chCode2-SF32(30),
                                                 chCode1-SF32(31)
                                                   (SIZE (32))
}
DownlinkAdditionalTimeslots ::=
                                    SECUENCE {
   parameters
                                       CHOICE {
        sameAsLast
                                            SEQUENCE {
            timeslotNumber
                                                TimeslotNumber
        },
        newParameters
                                            SEQUENCE {
           individualTimeslotInfo
                                                IndividualTimeslotInfo,
            dl-TS-ChannelisationCodesShort
                                                DL-TS-ChannelisationCodesShort
    }
}
DownlinkAdditionalTimeslots-VHCR ::= SEQUENCE {
                                        CHOICE {
   parameters
                                            SEQUENCE {
        sameAsLast
           timeslotNumber
                                                TimeslotNumber
                                            SEQUENCE {
       newParameters
            individualTimeslotInfo
                                                IndividualTimeslotInfo-VHCR,
            {\tt dl-TS-ChannelisationCodesShort}
                                                DL-TS-ChannelisationCodesShort-VHCR
    }
}
DownlinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
   parameters
                                        CHOICE {
       sameAsLast
                                            SEQUENCE {
           timeslotNumber
                                                TimeslotNumber-LCR-r4
        },
       newParameters
                                            SEQUENCE {
           individualTimeslotInfo
                                                IndividualTimeslotInfo-LCR-r4,
            dl-TS-ChannelisationCodesShort
                                                DL-TS-ChannelisationCodesShort
}
DownlinkAdditionalTimeslots-r7 ::= SEQUENCE {
   parameters
                                        CHOICE {
                                            SEQUENCE {
       sameAsLast
           timeslotNumber
                                                TimeslotNumber
        newParameters
                                            SEQUENCE {
           individualTimeslotInfo
                                                IndividualTimeslotInfo-r7,
            dl-TS-ChannelisationCodesShort
                                                DL-TS-ChannelisationCodesShort
        }
    }
}
DownlinkTimeslotsCodes ::=
                               SEQUENCE {
    firstIndividualTimeslotInfo
                                        IndividualTimeslotInfo,
    dl-TS-ChannelisationCodesShort
                                        DL-TS-ChannelisationCodesShort,
                                        CHOICE {
   moreTimeslots
       noMore
                                            NULL,
        additionalTimeslots
                                            CHOICE {
```

```
consecutive
                                                INTEGER (1..maxTS-1),
            timeslotList
                                                SEQUENCE (SIZE (1..maxTS-1)) OF
                                                    DownlinkAdditionalTimeslots
        }
    }
}
                                    SEQUENCE {
DownlinkTimeslotsCodes-VHCR ::=
    firstIndividualTimeslotInfo
                                        IndividualTimeslotInfo-VHCR,
    dl-TS-ChannelisationCodesShort
                                        DL-TS-ChannelisationCodesShort-VHCR,
    moreTimeslots
                                        CHOICE {
                                           NULL,
        noMore
        additionalTimeslots
                                            CHOICE {
           consecutive
                                               INTEGER (1..maxTS-1),
           timeslotList
                                                SEQUENCE (SIZE (1..maxTS-1)) OF
                                                    DownlinkAdditionalTimeslots-VHCR
        }
    }
}
DownlinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
                                        IndividualTimeslotInfo-LCR-r4,
    firstIndividualTimeslotInfo
    dl-TS-ChannelisationCodesShort
                                        DL-TS-ChannelisationCodesShort,
    moreTimeslots
                                        CHOICE {
                                           NULL,
       noMore
        additionalTimeslots
                                            CHOICE {
           consecutive
                                                INTEGER (1..maxTS-LCR-1),
            timeslotList
                                                SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                                                    DownlinkAdditionalTimeslots-LCR-r4
        }
    }
DownlinkTimeslotsCodes-r7 ::=
                                   SEQUENCE {
    firstIndividualTimeslotInfo
                                       IndividualTimeslotInfo-r7,
    dl-TS-ChannelisationCodesShort
                                        DL-TS-ChannelisationCodesShort,
    moreTimeslots
                                        CHOICE {
                                           NULL,
       noMore
       additionalTimeslots
                                            CHOICE {
                                                INTEGER (1..maxTS-1),
           consecutive
           timeslotList
                                                SEQUENCE (SIZE (1..maxTS-1)) OF
                                                    DownlinkAdditionalTimeslots-r7
        }
}
DPC-Mode ::=
                                    ENUMERATED {
                                        singleTPC,
                                        tpcTripletInSoft }
-- Actual value DPCCH-PowerOffset = IE value * 2
DPCCH-PowerOffset ::=
                                    INTEGER (-82..-3)
-- Actual value DPCCH-PowerOffset2 = 2 + (IE value * 4)
DPCCH-PowerOffset2 ::=
                                    INTEGER (-28..-13)
DPCH-CompressedModeInfo ::=
                                  SEQUENCE {
    tgp-SequenceList
                                       TGP-SequenceList
DPCH-CompressedModeStatusInfo ::= SEQUENCE {
    tgps-Reconfiguration-CFN
                                       TGPS-Reconfiguration-CFN,
    tgp-SequenceShortList
                                           SEQUENCE (SIZE (1..maxTGPS)) OF
                                            TGP-SequenceShort
-- Actual value DPCH-FrameOffset = IE value * 256
DPCH-FrameOffset ::=
                                    INTEGER (0..149)
                                   INTEGER (0..9)
FDPCH-SlotFormat ::=
UE-DRX-Cycle-InactivityThreshold ::= ENUMERATED {
                                        sub-frames-0,
                                        sub-frames-1,
                                        sub-frames-2,
                                        sub-frames-4,
                                        sub-frames-8,
                                        sub-frames-16.
                                        sub-frames-32,
```

```
sub-frames-64,
                                        sub-frames-128,
                                        sub-frames-256,
                                        sub-frames-512,
                                        spare5,
                                        spare4,
                                        spare3,
                                        spare2,
                                        spare1 }
DRX-Info ::=
                                    SEQUENCE {
    ue-drx-Cycle
                                        UE-DRX-Cycle,
    ue-drx-Cycle-InactivityThreshold
                                       UE-DRX-Cycle-InactivityThreshold,
   ue-GrantMonitoring-InactivityThreshold
                                        UE-GrantMonitoring-InactivityThreshold,
   ue-drx-GrantMonitoring
                                        BOOLEAN
}
                                    SEQUENCE {
DSCH-Mapping ::=
   maxTFCI-Field2Value
                                       MaxTFCI-Field2Value,
                                        SF-PDSCH,
    spreadingFactor
    codeNumber
                                        CodeNumberDSCH,
    multiCodeInfo
                                        MultiCodeInfo
                                    SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
DSCH-MappingList ::=
                                        DSCH-Mapping
DSCH-RadioLinkIdentifier ::=
                                    INTEGER (0..511)
DSCH-TransportChannelsInfo ::=
                                    SEQUENCE (SIZE (1..maxTrCH)) OF
                                       SEQUENCE {
    dsch-transport-channel-identity
                                            TransportChannelIdentity,
    dsch-TFS
                                            TransportFormatSet
}
DTX-DRX-Info-r7 ::=
                                    SEQUENCE {
                                       DTX-Info
                                                                            OPTIONAL,
   dtx-Info
   drx-Info
                                        DRX-Info
                                                                            OPTIONAL.
    uplink-DPCCHSlotFormatInformation Uplink-DPCCH-Slot-Format-Information
}
                                    SEQUENCE {
DTX-E-DCH-TTI-10ms ::=
   ue-dtx-Cycle1-10ms
                                       UE-DTX-Cycle1-10ms,
    ue-dtx-Cycle2-10ms
                                        UE-DTX-Cycle2-10ms,
   mac-dtx-Cycle-10ms
                                       MAC-DTX-Cycle-10ms
}
DTX-E-DCH-TTI-2ms ::=
                                    SEQUENCE {
                                       UE-DTX-Cycle1-2ms,
   ue-dtx-Cycle1-2ms
   ue-dtx-Cvcle2-2ms
                                        UE-DTX-Cycle2-2ms,
                                       MAC-DTX-Cycle-2ms
   mac-dtx-Cycle-2ms
}
DTX-Info ::=
                                   SEQUENCE {
    e-dch-TTI-Length
                                       CHOICE {
       dtx-e-dch-TTI-10ms
                                           DTX-E-DCH-TTI-10ms,
        dtx-e-dch-TTI-2ms
                                            DTX-E-DCH-TTI-2ms
    ue-dtx-cycle2InactivityThreshold UE-DTX-Cycle2InactivityThreshold,
   ue-dtx-cycle2DefaultSG
                                       INTEGER (0..38)
                                                                            OPTIONAL,
    -- if ue-dtx-long-preamble-length is not present, the value is '2 slots'

    ue-dtx-long-preamble-length
    UE-DTX-long-preamble-length

   mac-InactivityThreshold
                                       MAC-InactivityThreshold,
   cqi-dtx-Timer
                                       CQI-DTX-Timer,
    ue-dpcch-Burst1
                                       UE-DPCCH-Burst,
                                        UE-DPCCH-Burst
    ue-dpcch-Burst2
}
DurationTimeInfo ::=
                                   INTEGER (1..4096)
DynamicPersistenceLevel ::=
                                   INTEGER (1..8)
                                   SEQUENCE (SIZE (1..maxPRACH)) OF
DynamicPersistenceLevelList ::=
                                        DynamicPersistenceLevel
DynamicPersistenceLevelTF-List ::= SEQUENCE (SIZE (1..maxTF-CPCH)) OF
                                        DynamicPersistenceLevel
```

```
DynamicTFInformationCCCH ::= SEQUENCE {
    octetModeRLC-SizeInfoType2
}
E-AGCH-ChannelisationCode ::=
                                   INTEGER (0..255)
                           SEQUENCE {
E-AGCH-Individual ::=
                                    INTEGER (0..14),
    tS-number
    channelisation-code
                                         DL-TS-ChannelisationCode,
    channelisation-code
midambleShiftAndBurstType
                                        MidambleShiftAndBurstType-EDCH
}
E-AGCH-Individual-VHCR ::=
    tS-number
    channelisation-code
    midambleShiftAndBurstType
                                 SEQUENCE {
                                        INTEGER (0..14),
                                         DL-TS-ChannelisationCode-VHCR,
                                      MidambleShiftAndBurstType-EDCH
}
E-AGCH-Individual-LCR ::=
                                SEQUENCE {
    firstChannelisationCode
secondChannelisationCode
midambleAllocationMode
defaultMidamble
                                   TimeslotNumber-LCR-r4,
HS-ChannelisationCode-LCR,
HS-ChannelisationCode-LCR,
CHOICE {
                                            NULL,
        commonMidamble
                                            NULL.
        ueSpecificMidamble
                                            INTEGER (0..15)
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration
                                       INTEGER (1..8)
}
    GCH-Information ::= SEQUENCE {
e-AGCH-ChannelisationCode E-AGCH
E-AGCH-Information ::=
                                      E-AGCH-ChannelisationCode
}
{\tt E-AGCH-Information-r7} ::= \\ {\tt SEQUENCE} \ \{
                                    CHOICE {
    modeSpecific
                                          SEQUENCE {
        fdd
                                             E-AGCH-ChannelisationCode
            e-AGCH-ChannelisationCode
            },
        tdd
                                            CHOICE {
                                              SEQUENCE {
            t.dd384
                                                 BOOLEAN OPTIONAL,
                long-Term-Grant-Indicator
                length-of-TTRI-field
                                                    INTEGER (1..12),
                e-AGCH-Set-Config
                                                    E-AGCH-Set-Config,
               Bler-Target
                e-AGCH-BLER-Target
            },
            tdd768
                                                E-AGCn 2.
Bler-Target
            },
            tdd128
                                               SEQUENCE {
                                                   BOOLEAN,
                rdi-Indicator
                tpc-StepSize
                                                    TPC-StepSizeTDD,
                e-AGCH-Set-Config
                                                    E-AGCH-Set-Config-LCR,
                e-AGCH-BLER-Target
                                                    Bler-Target
            }
       }
    }
}
                       SEQUENCE (SIZE (1..maxNumE-AGCH)) OF
E-AGCH-Set-Config ::=
                                        E-AGCH-Individual
E-AGCH-Set-Config-VHCR ::=
                                   SEQUENCE (SIZE (1..maxNumE-AGCH)) OF
                                        E-AGCH-Individual-VHCR
E-AGCH-Set-Config-LCR ::= SEQUENCE (SIZE (1..maxNumE-AGCH)) OF
                                        E-AGCH-Individual-LCR
E-DCH-MinimumSet-E-TFCI ::=
                                   INTEGER (0..127)
E-DCH-ReconfigurationInfo ::= SEQUENCE {
    e-DCH-RL-InfoNewServingCell E-DCH-RL-InfoNewServingCell
                                                                                OPTIONAL,
                                        SEQUENCE (SIZE (1..maxEDCHRL)) OF
    e-DCH-RL-InfoOtherCellList
```

```
E-DCH-RL-InfoOtherCell
                                                                              OPTIONAL
}
E-DCH-ReconfigurationInfo-r7 ::= SEQUENCE {
   OPTIONAL,
                                       SEQUENCE (SIZE (1..maxEDCHRL)) OF
                                           E-DCH-RL-InfoOtherCell
                                                                              OPTIONAL
}
E-DCH-RL-InfoNewServingCell ::=
                                  SEQUENCE {
   primaryCPICH-Info
                                      PrimaryCPICH-Info,
   e-AGCH-Information
                                       E-AGCH-Information,
   servingGrant
                                       SEOUENCE {
       value
                                         INTEGER (0..38)
                                                                              OPTIONAL,
       primary-Secondary-GrantSelector
                                          ENUMERATED { primary, secondary }
       OPTIONAL,
                                E-DPCCH-DPCCH-PowerOffset
E-DPDCH-Reference-E-TFCIList
INTEGER (0..6)
INTEGER (0..37)
INTEGER (0..37)
E-HICH-Information OPTION
   e-DPCCH-DPCCH-PowerOffset
                                                                              OPTIONAL.
   reference-E-TFCIs
                                                                              OPTIONAL,
   powerOffsetForSchedInfo
                                                                              OPTIONAL.
   threeIndexStepThreshold
twoIndexStepThreshold
                                                                              OPTIONAL,
   twoIndexStepThreshold
                                                                              OPTIONAL,
   e-HICH-Information
                                                             OPTIONAL,
                                     CHOICE {
   e-RGCH-Info
       e-RGCH-Information
                                        E-RGCH-Information,
       releaseIndicator
                                          NULL
      OPTIONAL
}
E-DCH-RL-InfoNewServingCell-r7 ::= SEQUENCE {
   primaryCPICH-Info
                                       PrimaryCPICH-Info,
                                       E-AGCH-Information,
    e-AGCH-Information
                                       SEQUENCE {
   servingGrant
       value
                                           INTEGER (0..38)
                                                                              OPTIONAL,
                                          ENUMERATED { primary, secondary }
       primary-Secondary-GrantSelector
   OPTIONAL,
                                                                              OPTIONAL,
                                                                              OPTIONAL,
                                    INTEGER (0..6)
INTEGER (0..37)
                                                                              OPTIONAL,
   threeIndexStepThreshold
twoIndexStepThreshold
                                                                              OPTIONAL,
   twoIndexStepThreshold
                                    INTEGER (0..37)
E-HICH-Information
                                                                              OPTIONAL,
   e-HICH-Information
                                                            OPTIONAL,
                                      CHOICE {
    E-RGCH-Information,
   e-RGCH-Info
       e-RGCH-Information
       releaseIndicator
                                          NULL
       OPTIONAL
}
E-DCH-RL-InfoOtherCell ::=
                                 SEQUENCE {
   primaryCPICH-Info
                                      PrimaryCPICH-Info,
   e-HICH-Info
                                       CHOICE {
       e-HICH-Information
                                          E-HICH-Information,
       releaseIndicator
                                          NULL
      OPTIONAL,
                                      CHOICE {
   e-RGCH-Info
                                          E-RGCH-Information,
       e-RGCH-Information
       releaseIndicator
                                          NULL
      OPTIONAL
}
E-DCH-RL-InfoSameServingCell ::= SEQUENCE {
   e-DPCCH-DPCCH-PowerOffset
                                      E-DPCCH-DPCCH-PowerOffset
                                                                              OPTIONAL,
                                       E-DPDCH-Reference-E-TFCIList-r7
   reference-E-TFCIs
                                                                              OPTIONAL
}
E-DPCCH-Info ::=
                                   SEOUENCE {
   e-DPCCH-DPCCH-PowerOffset
                                       E-DPCCH-DPCCH-PowerOffset,
   happyBit-DelayCondition
                                      HappyBit-DelayCondition
}
E-DPCCH-Info-r7 ::=
                                   SEQUENCE {
   e-DPCCH-DPCCH-PowerOffset
                                   E-DPCCH-DPCCH-PowerOffset,
   happyBit-DelayCondition
                                      HappyBit-DelayCondition,
   e-TFC-Boost-Info
                                      E-TFC-Boost-Info-r7
                                                                         OPTIONAL,
   e-DPDCH-PowerInterpolation
                                     E-DPDCH-PowerInterpolation
                                                                         OPTIONAL
E-DPCCH-DPCCH-PowerOffset ::=
                                 INTEGER (0..8)
```

```
e-DCH-MinimumSet-E-TFCI
reference-E-TFCIs
maxChannelisationCodes
pl-NonMax
E-DPDCH-Info ::=
                                    SEQUENCE {
                                                                               OPTIONAL,
                                        E-DPDCH-Reference-E-TFCIList,
                                          E-DPDCH-MaxChannelisationCodes,
    E-DPDCH-PL-NonMax,
schedulingInfoConfiguration
threeIndexStepThreshold
twoIndexStepThreshold
INTEGER (0..37)
INTEGER (0..37)
                                                                                 OPTIONAL.
                                                                                 OPTIONAL
                                   SEQUENCE {
    PDCH-Info-r7 ::=
e-TFCI-TableIndex
E-DPDCH-Info-r7 ::=
                                    E-TFCI-TableIndex,
E-DCH-MinimumSet-E-TFCI
E-DPDCH-Reform
    e-DCH-MinimumSet-E-TFCI
                                                                               OPTIONAL,
    reference-E-TFCIs
                                          E-DPDCH-Reference-E-TFCIList-r7,
    maxChannelisationCodes
                                         E-DPDCH-MaxChannelisationCodes,
    pl-NonMax E-DPDCH-PL-NonMax, schedulingInfoConfiguration threeIndexStepThreshold INTEGER (0..37)
                                                                                 OPTIONAL,
    twoIndexStepThreshold
                                          INTEGER (0..37)
                                                                                 OPTIONAL
}
E-DPDCH-PeriodicyOfSchedInfo ::= ENUMERATED {
                                          everyEDCHTTI, ms4, ms10, ms20, ms50, ms100, ms200, ms500,
                                          ms1000 }
-- The actual value of E-DPDCH-PL-NonMax is: IE value * 0.04
E-DPDCH-PL-NonMax ::=
                                    INTEGER (11..25)
E-DPDCH-PowerInterpolation ::=
                                    BOOLEAN
E-DPDCH-Reference-E-TFCI ::=
                                    SEQUENCE {
                                     INTEGER (0..127),
    reference-E-TFCI
                                          INTEGER (0..29)
    reference-E-TFCI-PO
}
E-DPDCH-Reference-E-TFCI-r7 ::= SEQUENCE {
                                     INTEGER (0..127),
   reference-E-TFCI
                                          INTEGER (0..31)
    reference-E-TFCI-PO-r7
}
E-DPDCH-Reference-E-TFCIList ::= SEQUENCE (SIZE (1..8)) OF E-DPDCH-Reference-E-TFCI
E-DPDCH-Reference-E-TFCIList-r7 ::= SEQUENCE (SIZE (1..8)) OF E-DPDCH-Reference-E-TFCI-r7
E-DPDCH-SchedulingInfoConfiguration ::= SEQUENCE {
    periodicityOfSchedInfo-NoGrant E-DPDCH-PeriodicyOfSchedInfo OPTIONAL, periodicityOfSchedInfo-Grant E-DPDCH-PeriodicyOfSchedInfo OPTIONAL, powerOffsetForSchedInfo INTEGER (0..6)
}
E-DPDCH-SchedulingTransmConfiguration ::= SEQUENCE {
   ms2-SchedTransmGrantHARQAlloc BIT STRING (SIZE (8))
                                                                               OPTIONAL,
    servingGrant
                                          SEQUENCE {
                                              INTEGÈR (0..38),
       value
        primary-Secondary-GrantSelector
                                              ENUMERATED { primary, secondary }
            OPTIONAL
}
E-DPDCH-MaxChannelisationCodes ::= ENUMERATED {
                                          sf256, sf128, sf64, sf32, sf16, sf8, sf4, sf4x2, sf2x2,
sf4x2-and-sf2x2 }
E-HICH-ChannelisationCode ::= INTEGER (0..127)
                                     SEQUENCE {
E-HICH-Information ::=
                                          E-HICH-ChannelisationCode,
    channelisationCode
                                          E-HICH-RGCH-SignatureSequence
    signatureSequence
}
E-HICH-Information-TDD384-768 ::= SEQUENCE {
   n-E-HICH
                                          INTEGER (4..44),
                                          INTEGER (0..14),
    tS-Number
    modeSpecificInfo
                                               CHOICE {
        tdd384
                                                   DL-TS-ChannelisationCode,
                                                   DL-TS-ChannelisationCode-VHCR
        tdd768
                                          ENUMERATED { type1, type2 },
    burst-Type
```

```
ENUMERATED { default, common }
   midamble-Allocation-Mode
}
E-HICH-Information-LCR ::=
                                  SEQUENCE {
                                        INTEGER (0..3),
    timeslotNumber
                                         TimeslotNumber-LCR-r4,
    channelisation-Code
                                        HS-ChannelisationCode-LCR,
    midambleAllocationMode
                                        CHOICE {
        defaultMidamble
                                            NULL,
        ueSpecificMidamble
                                             INTEGER (0..15)
    -- Actual value midambleConfiguration = IE value * 2
   midambleConfiguration
                                        INTEGER (1..8)
}
\hbox{E-HICH-Information-TDD128} \ ::= \ \ \hbox{SEQUENCE} \ \big\{
                                       INTEGER (4..15),
    n-E-HICH
    e-HICH-InfoList
                                         E-HICH-Information-LCR-List
E-HICH-Information-LCR-List ::= SEQUENCE (SIZE (1..maxNumE-HICH)) OF
                                        E-HICH-Information-LCR
E-HICH-RGCH-SignatureSequence ::= INTEGER (0..39)
                                    SEQUENCE {
E-PUCH-Info ::=
    e-TFCS-Info
                                       E-TFCS-Info,
                                         CHOICE {
    modeSpecificInfo
        tdd348-tdd768
                                           SEQUENCE {
           348-taa/00
noSlotsForTFCIandTPC
                                               INTEGER (1..12),
                                                 INTEGER (-35..10),
            e-PUCH-ContantValue
            e-PUCH-TS-ConfigurationList
                                               SEQUENCE (SIZE (1..maxTS-2)) OF E-PUCH-TS-Slots,
            e-PUCH-CodeHopping
                                               BOOLEAN,
INTEGER (1..3),
            e-PUCH-TPC-Step-Size
            minimum-Allowed-Code-Rate INTEGER (0..63), maximum-Allowed-Code-Rate INTEGER (0..63)
        },
        tdd128
                                           SEQUENCE {
            snpl-ReportType
                                                ENUMERATED { type1, type2 }
                                                                                       OPTIONAL,
                                                 INTEGER (-112..-50),
            prxBASEdes
            beaconPLEst
                                                 BOOLEAN
                                                                                          OPTIONAL,
                                                TPC-StepSizeTDD,
            tpc-StepSize
            pebase-PowerControlGAP PowerControlGAP UL-SynchronisationParameters UL-SynchronisationParameters-r4 e-PUCH-TS-ConfigurationList SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                                                                                         OPTIONAL,
                                                                                          OPTIONAL,
            minimum-Allowed-Code-Rate
                                               INTEGER (0..63),
            maximum-Allowed-Code-Rate
                                              INTEGER (0..63),
            maximumNumOfRetransSchedInfo
                                                INTEGER (0..15),
            retransTimerForSchedInfo
                                                 ENUMERATED { ms10, ms15, ms20, ms25, ms30, ms35,
                                                     ms40, ms45, ms50, ms55, ms60, ms65, ms70, ms75,
                                                     ms80, ms85, ms90, ms95, ms100, ms110, ms120,
                                                     ms140, ms160, ms200, ms240, ms280, ms320, ms400, ms480, ms560 }
    -- For 3.84/7.68\ \mathrm{TDD} only, should be ignored for 1.28\mathrm{Mcps}\ \mathrm{TDD} mode
    OPTIONAL
}
E-PUCH-TS-Slots ::=
                                    SEQUENCE {
    ts-Number
                                        INTEGER (0..14),
    midambleShiftAndBurstType
                                         MidambleShiftAndBurstType-EDCH
}
E-PUCH-TS-Slots-LCR ::=
                                   SEQUENCE {
                                   TimeslotNumber-LCR-r4,
    timeslotNumber
    midambleAllocationMode
                                        CHOICE {
        defaultMidamble
                                            NULL.
                                             INTEGER (0..15)
        ueSpecificMidamble
     -- Actual value midambleConfiguration = IE value * 2
   midambleConfiguration
                                       INTEGER (1..8)
}
E-RGCH-CombinationIndex ::=
                                   INTEGER (0..5)
                                    SEQUENCE {
E-RGCH-Information ::=
```

```
signatureSequence
                                       E-HICH-RGCH-SignatureSequence,
   rg-CombinationIndex
                                       E-RGCH-CombinationIndex
}
E-RUCCH-AccessServiceClass ::=
                                  PRACH-Partitioning-LCR-r4
                                   SEQUENCE {
E-RUCCH-Info ::=
   modeSpecificInfo
                                       CHOICÈ {
                                           SEQUENCE {
        tdd384-tdd768
           e-RUCCH-ConstantValue
                                               INTEGER (-35..10),
            e-RUCCH-PersistenceScalingFactor
                                                PersistenceScalingFactor,
                                               ENUMERATED {ms40, ms80, ms120, ms160, ms200,
            t-RUCCH
                                                   ms240, ms280, ms320}
                                                                                       OPTIONAL.
            e-RUCCH-TS-Number
                                                INTEGER (0..14)
                                                                                       OPTIONAL,
            e-RUCCH-Midamble
                                                ENUMERATED {direct, direct-Inverted}
                                                ENUMERATED { sec1, sec2, sec4, sec8, sec16,
            t-adv
                                               sec32, sec128, infinity } OPTI ENUMERATED { zero, ms40, ms80, ms160, ms250,
                                                                                       OPTIONAL.
           t-SCHED
                                                   sec1, sec2, sec4 }
            modeSpecificInfo
                                                CHOICE {
                                                   CHOICE {
               tdd384
                                                        SEQUENCE (SIZE (1..8)) OF SF16Codes,
                   sF16
                    sF8
                                                        SEQUENCE (SIZE (1..8)) OF SF8Codes
                    },
                tdd768
                                               CHOICE {
                                                        SEQUENCE (SIZE (1..16)) OF SF32Codes,
                   sF32
                   sF816
                                                        SEQUENCE (SIZE (1..16)) OF SF16Codes2
           }
                                           SEQUENCE {
        tdd128
           t-RUCCH
                                               ENUMERATED { ms20, ms40, ms60, ms80, ms120,
                                                   ms160, ms200, ms240, ms280, ms320,
                                                   ms400, ms500, ms600, ms800, ms1000,
                                                                                       OPTIONAL,
                                                   ms2000 }
            n-RUCCH
                                                INTEGER (0..7)
                                                                                       OPTIONAL,
                                                ENUMERATED { everyEDCHTTI, ms40, ms80, ms160,
            t-WAIT
                                                   ms320, ms640, ms1000, ms2000 }
                                                                                      OPTIONAL,
            t-ST
                                               ENUMERATED { everyEDCHTTI, ms20, ms40, ms60, ms80,
                                                                                       OPTIONAL,
                                                   ms160, ms200 }
            extendedEstimationWindow
                                               INTEGER (2..5)
                                                                                       OPTIONAL,
           e-RUCCH-AccessServiceClass
                                               E-RUCCH-AccessServiceClass
                                                                                       OPTIONAL.
                                                                                    OPTIONAL,
            e-RUCCH-PersistenceScalingFactor PersistenceScalingFactorList
            sync-UL-InfoForE-RUCCH
                                               SYNC-UL-InfoForE-RUCCH
           prach-information
                                               PRACH-Information-LCR-List
                                                                                      OPTIONAL
    }
}
E-TFC-Boost-Info-r7 ::=
                               SEQUENCE {
    e-TFCI-Boost
                                       INTEGER (0..127),
    delta-T2TP
                                       INTEGER (0..6)
                                                                          OPTIONAL
E-TFCI-TableIndex ::=
                                   INTEGER (0..1)
E-TFCS-Info ::=
                                   SEQUENCE {
   reference-Beta-QPSK-List
                                       SEQUENCE (SIZE (1..8)) OF Reference-Beta-QPSK,
    reference-Beta-160AM-List
                                       SEQUENCE (SIZE (1..8)) OF Reference-Beta-16QAM
EnablingDelay ::=
                                   ENUMERATED {
                                       radio-frames-0,
                                       radio-frames-1,
                                       radio-frames-2,
                                       radio-frames-4,
                                       radio-frames-8,
                                       radio-frames-16,
                                       radio-frames-32,
                                       radio-frames-64,
                                       radio-frames-128,
                                       spare7,
                                        spare6,
                                        spare5,
                                        spare4,
                                        spare3,
                                        spare2,
```

```
spare1 }
                                    SEQUENCE {
EXT-UL-TimingAdvance ::=
    {\tt modeSpecificInfo}
                                     CHOICE {
        tdd384
                                         SEOUENCE {
            ex-ul-TimingAdvance
                                         INTEGER (0..255)
        tdd768
                                        SEQUENCE {
            ex-ul-TimingAdvance
                                        INTEGER (0..511)
    }
}
FACH-PCH-Information ::=
                                     SEQUENCE {
    transportFormatSet
                                        TransportFormatSet,
    transportChannelIdentity
                                         TransportChannelIdentity,
    ctch-Indicator
                                        BOOLEAN
FACH-PCH-InformationList ::=
                                     SEQUENCE (SIZE (1..maxFACHPCH)) OF
                                         FACH-PCH-Information
Feedback-cycle ::=
                                     ENUMERATED {
                                         fc0, fc2, fc4, fc8, fc10, fc20, fc40, fc80, fc160}
Feedback-cycle-r7 ::=
                                     ENUMERATED {
                                         fc0, fc2, fc4, fc8, fc10, fc20, fc40, fc80, fc160,
                                         fc16, fc32, fc64, spare4, spare3, spare2, spare1 }
FPACH-Info-r4 ::=
                                         SEQUENCE {
    timeslot
                                         TimeslotNumber-LCR-r4,
    channelisationCode
                                         TDD-FPACH-CCode16-r4,
    midambleShiftAndBurstType
                                         MidambleShiftAndBurstType-LCR-r4,
                                         Wi-LCR
}
FrequencyInfo ::=
                                     SEQUENCE {
    modeSpecificInfo
                                         CHOICE {
        fdd
                                             FrequencyInfoFDD,
        tdd
                                             FrequencyInfoTDD
}
                                    SEQUENCE {
FrequencyInfoFDD ::=
    uarfcn-UL
                                        UARFCN
                                                            OPTIONAL,
    uarfcn-DL
                                         UARFCN
FrequencyInfoTDD ::=
                                     SEQUENCE {
    uarfcn-Nt
                                        UARFCN
HappyBit-DelayCondition ::=
                                     ENUMERATED {
                                         ms2, ms10, ms20, ms50, ms100, ms200, ms500, ms1000 }
HARQ-Preamble-Mode ::=
                                     INTEGER (0..1)
HS-ChannelisationCode-LCR ::=
                                     ENUMERATED {
                                         cc16-1, cc16-2, cc16-3, cc16-4,
                                         cc16-5, cc16-6, cc16-7, cc16-8, cc16-9, cc16-10, cc16-11, cc16-12,
                                         cc16-13, cc16-14, cc16-15, cc16-16 }
                                        SEQUENCE {
HS-DSCH-CommonSystemInformation ::=
                                             CommonRBMappingInfo,
    ccch-MappingInfo
                                             {\tt CommonRBMappingInfo}
    srb1-MappingInfo
                                                                                      OPTIONAL,
    common-MAC-ehs-ReorderingQueueList
                                             Common-MAC-ehs-ReorderingQueueList,
                                             HS-SCCH-SystemInfo,
    hs-scch-SystemInfo
                                             HARQ-Info,
    harg-SystemInfo
                                             SEQUENCE (SIZE (1..maxCommonHRNTI)) OF
    common-H-RNTI-information
                                                 H-RNTI,
   bcchSpecific-H-RNTI
                                             H-RNTI
}
HS-DSCH-PagingSystemInformation ::= SEQUENCE {
    dlScramblingCode
                                             SecondaryScramblingCode
                                                                                      OPTIONAL,
    pich-ForHSDPASupportedPagingList
                                             SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                                 PICH-ForHSDPASupportedPaging,
    numberOfPcchTransmissions
                                             INTEGER (1..5),
```

```
transportBlockSizeList
                                           SEQUENCE (SIZE (1..2)) OF
                                               TransportBlockSizeIndex
}
HS-DSCH-TBSizeTable ::=
                                       ENUMERATED { octetAligned }
HS-PDSCH-Midamble-Configuration-TDD128 ::= SEQUENCE {
    midambleAllocationMode
                                       CHOICE{
       defaultMidamble
                                           NULL
        commonMidamble
                                           NULL,
       ueSpecificMidamble
                                           INTEGER (0..15)
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration
                                       INTEGER (1..8)
}
                                   SEOUENCE {
HS-SCCH-Info ::=
                                       CHOICE {
   modeSpecificInfo
                                           SEQUENCE {
       fdd
           hS-SCCHChannelisationCodeInfo
                                             SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                 HS-SCCH-Codes,
           dl-ScramblingCode
                                               SecondaryScramblingCode
                                                                          OPTIONAL
        tdd
                                           CHOICE {
           tdd384
                                               SEQUENCE {
               nack-ack-power-offset
                                                INTEGER (-7..8),
                hs-SICH-PowerControl-Info
                                                  HS-SICH-Power-Control-Info-TDD384,
                hS-SCCH-SetConfiguration
                                                  SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                      HS-SCCH-TDD384
                                               SEQUENCE (SIZE (1..maxHSSCCHs)) OF
           t.dd128
                                                   HS-SCCH-TDD128
        }
    }
}
                                   SEOUENCE {
HS-SCCH-Info-r6 ::=
   modeSpecificInfo
                                       CHOICE {
                                           SEOUENCE {
        fdd
           hS-SCCHChannelisationCodeInfo
                                               SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                  HS-SCCH-Codes,
                                               SecondaryScramblingCode
           dl-ScramblingCode
                                                                              OPTIONAL
        },
        t.dd
                                           CHOICE {
            tdd384
                                               SEQUENCE {
                nack-ack-power-offset
                                                   INTEGER (-7..8),
                                                   HS-SICH-Power-Control-Info-TDD384,
                hs-SICH-PowerControl-Info
                                                   DHS-Sync
                dhs-sync
                                                                              OPTIONAL,
                                                   Bler-Target,
               bler-target
               hS-SCCH-SetConfiguration
                                                   SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                       HS-SCCH-TDD384-r6
            tdd128
                                               SEQUENCE {
                                                   INTEGER (-7..8),
               nack-ack-power-offset
                                                   INTEGER (-120..-58),
                power-level-HSSICH
                                                   ENUMERATED { s1, s2, s3 , spare1 },
                tpc-step-size
                bler-target
                                                   Bler-Target,
                hS-SCCH-SetConfiguration
                                                   SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                       HS-SCCH-TDD128-r6
           }
       }
}
HS-SCCH-Info-r7 ::=
                                   SEQUENCE {
    modeSpecificInfo
                                       CHOICE {
                                           SEQUENCE {
           hS-SCCHChannelisationCodeInfo
                                               SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                   HS-SCCH-Codes,
                                               SecondaryScramblingCode OPTIONAL
           dl-ScramblingCode
        },
        tdd
                                           CHOICE {
           tdd384
                                               SEQUENCE {
                                                INTEGER (-7..8),
                nack-ack-power-offset
                hs-SICH-PowerControl-Info
                                                   HS-SICH-Power-Control-Info-TDD384,
                dhs-svnc
                bler-target
                                                   Bler-Target,
                                                   SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                hS-SCCH-SetConfiguration
```

```
HS-SCCH-TDD384-r6
            tdd768
                                                SEQUENCE {
                nack-ack-power-offset
                                                    INTEGER (-7..8),
                hs-SICH-PowerControl-Info
                                                    HS-SICH-Power-Control-Info-TDD768,
                dhs-sync
                                                    Bler-Target,
                bler-target
                                                    SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                hS-SCCH-SetConfiguration
                                                        HS-SCCH-TDD768
            tdd128
                                                SEQUENCE {
                                                    INTEGER (-7..8),
                nack-ack-power-offset
                                                    INTEGER (-120..-58),
                power-level-HSSICH
                tpc-step-size
                                                    ENUMERATED { s1, s2, s3 , spare1 },
                bler-target
                                                    Bler-Target,
                powerControlGAP
                                                    PowerControlGAP
                                                                                     OPTIONAL,
                                                  BOOLEAN OP'
SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                pathlossCompensationSwitch
                                                                                     OPTIONAL,
                hS-SCCH-SetConfiguration
                                                        HS-SCCH-TDD128-r6
            }
       }
    }
}
                                    INTEGER (0..127)
HS-SCCH-Codes ::=
HS-SCCH-Less-NewOperation ::=
                                    SEQUENCE {
   hs-pdsch-CodeIndex
                                        INTEGER (1..15),
   hs-scch-LessTFS
                                        HS-SCCH-LessTFSList
}
HS-SCCH-LessInfo-r7 ::=
   SCCH-LessInfo-r7 ::=
hs-scchLessOperation
                                    SEQUENCE {
                                        CHOICE {
       continue
                                            NULL
        newOperation
                                            HS-SCCH-Less-NewOperation
}
HS-SCCH-LessTFSList ::=
                                    SEQUENCE (SIZE (1..maxHS-SCCHLessTrBlk)) OF
                                        SEQUENCE {
    hs-scch-LessTFSI
                                            INTEGER (1..90),
   hs-scch-LessSecondCodeSupport
                                            BOOLEAN
}
HS-SCCH-SystemInfo::=
                                    SEQUENCE {
    dl-ScramblingCode
                                        SecondaryScramblingCode
                                                                                 OPTIONAL,
   hS-SCCHChannelisationCodeInfo
                                        SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                            HS-SCCH-Codes
HS-SCCH-TDD128 ::=
                                SEQUENCE {
   timeslotNumber
                                        TimeslotNumber-LCR-r4,
    firstChannelisationCode
                                        HS-ChannelisationCode-LCR,
    secondChannelisationCode
                                        HS-ChannelisationCode-LCR,
    midambleAllocationMode
                                        CHOICE {
       defaultMidamble
                                            NULL,
        {\tt commonMidamble}
                                            NULL,
       ueSpecificMidamble
                                            INTEGER(0..15)
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration
                                        INTEGER (1..8),
   bler-target
                                        Bler-Target,
   hs-sich-configuration
                                        HS-SICH-Configuration-TDD128
}
HS-SCCH-TDD128-r6 ::=
                                    SEQUENCE {
    timeslotNumber
                                        TimeslotNumber-LCR-r4,
    firstChannelisationCode
                                        HS-ChannelisationCode-LCR,
    secondChannelisationCode
                                        HS-ChannelisationCode-LCR,
    midambleAllocationMode
                                        CHOICE {
        defaultMidamble
                                            NULL,
       commonMidamble
                                            NULL,
       ueSpecificMidamble
                                            INTEGER (0..15)
     -- Actual value midambleConfiguration = IE value * 2
   midambleConfiguration INTEGER (1..8),
hs-sich-configuration HS-SICH-Configuration-TDD128-r6
}
```

```
--for TDD128 Multi-Carrier
HS-SCCH-TDD128-MultiCarrier ::= SEQUENCE {
                                    UARFCN,
   uarfcn-HS-SCCH-Rx
                             TimeslotNumber-LCR-r4,
HS-ChannelisationCode-LCR,
HS-ChannelisationCode-LCR,
CHOICE {
    timeslotNumber
    firstChannelisationCode
    secondChannelisationCode
    midambleAllocationMode
       defaultMidamble
                                           NULL,
        commonMidamble
                                            NULL,
                                           INTEGER(0..15)
       ueSpecificMidamble
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration
                                       INTEGER (1..8),
    bler-target
                                       Bler-Target,
                                       HS-SICH-Configuration-TDD128
   hs-sich-configuration
}
HS-SICH-Configuration-TDD128 ::= SEQUENCE {
    timeslotNumber
                                       TimeslotNumber-LCR-r4,
    channelisationCode
                                       HS-ChannelisationCode-LCR,
    midambleAllocationMode
                                       CHOICE {
        defaultMidamble
                                           NULL,
       ueSpecificMidamble
                                           SEQUENCE {
           midambleShift
                                               MidambleShiftLong
     - Actual value midambleConfiguration = IE value * 2
   midambleConfiguration
nack-ack-power-offset
power-level-HSSICH
                                       INTEGER (1..8),
                                       INTEGER (-7..8),
                                       INTEGER (-120..-58),
    tpc-step-size
                                       ENUMERATED { s1, s2, s3 , spare1}
}
HS-SICH-Configuration-TDD128-r6 ::= SEQUENCE {
    timeslotNumber
                                       TimeslotNumber-LCR-r4,
    channelisationCode
                                       HS-ChannelisationCode-LCR,
    midambleAllocationMode
                                       CHOICE {
       defaultMidamble
                                           NUT T.
       ueSpecificMidamble
                                           SEQUENCE {
           midambleShift
                                               MidambleShiftLong
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration
                                      INTEGER (1..8)
}
HS-SCCH-TDD384 ::=
                              SEQUENCE {
    timeslotNumber
                                       TimeslotNumber,
    channelisationCode
                                       DL-TS-ChannelisationCode,
   midambleAllocationMode
                                       CHOICE {
       defaultMidamble
                                           NULL,
        commonMidamble
                                           NULL,
       ueSpecificMidamble
                                           SEQUENCE {
           midambleShift
                                               MidambleShiftLong
   midambleconfiguration
                                       MidambleConfigurationBurstTypeland3,
   bler-target
                                       Bler-Target,
   hs-sich-configuration
                                       HS-SICH-Configuration-TDD384
}
HS-SCCH-TDD384-r6 ::=
                                  SEQUENCE {
    timeslotNumber
                                       TimeslotNumber,
                                       DL-TS-ChannelisationCode,
    channelisationCode
    midambleAllocationMode
                                       CHOICE {
       defaultMidamble
                                           NULL,
       commonMidamble
                                           NULL,
       ueSpecificMidamble
                                           SEQUENCE {
           midambleShift
                                               MidambleShiftLong
    midambleconfiguration
                                      MidambleConfigurationBurstTypeland3,
   hs-sich-configuration
                                       HS-SICH-Configuration-TDD384
}
                              SEQUENCE {
HS-SCCH-TDD768 ::=
    timeslotNumber
                                       TimeslotNumber,
```

```
channelisationCode
                                       DL-TS-ChannelisationCode-VHCR,
    midambleAllocationMode
                                       CHOICE {
       defaultMidamble
                                           NULL,
                                            NULL,
        commonMidamble
        ueSpecificMidamble
                                            SEQUENCE {
           midambleShift
                                                MidambleShiftLong
    midambleconfiguration
                                       MidambleConfigurationBurstTypeland3,
    hs-sich-configuration
                                       HS-SICH-Configuration-TDD768
}
HS-SICH-Configuration-TDD384 ::= SEQUENCE {
    timeslotNumber
                                       TimeslotNumber,
    channelisationCode
                                        DL-TS-ChannelisationCode,
   midambleAllocationMode
                                        CHOICE {
        defaultMidamble
                                           NULL
        ueSpecificMidamble
                                            SEQUENCE {
           midambleShift
                                               MidambleShiftLong
    },
    midambleconfiguration
                                      MidambleConfigurationBurstType1and3
HS-SICH-Configuration-TDD768 ::= SEQUENCE {
    timeslotNumber
                                       TimeslotNumber,
    channelisationCode
                                        DL-TS-ChannelisationCode-VHCR,
    midambleAllocationMode
                                       CHOICE {
       defaultMidamble
                                           NULL,
       ueSpecificMidamble
                                            SEQUENCE {
           midambleShift
                                               MidambleShiftLong
    midambleconfiguration
                                       MidambleConfigurationBurstType1and3
}
HS-SICH-Power-Control-Info-TDD384 ::= SEQUENCE {
    -- Actual value ul-target-SIR = IE value * 0.5
   ul-target-SIR
                                       INTEGER (-22..40),
    -- Note: IE 'ConstantValue' is used (instead of IE 'ConstantValueTDD') to keep
    -- compatibility with REL-5
   hs-sich-ConstantValue
                                       ConstantValue
}
HS-SICH-Power-Control-Info-TDD768 ::= SEQUENCE {
    -- Actual value ul-target-SIR = IE value * 0.5
                                       INTEGER (-22..40).
    ul-target-SIR
    -- Note: IE 'ConstantValue' is used (instead of IE 'ConstantValueTDD') to keep
    -- compatibility with REL-5
   hs-sich-ConstantValue
}
IndividualTimeslotInfo ::=
                                  SEQUENCE {
    timeslotNumber
                                       TimeslotNumber,
    tfci-Existence
                                        BOOLEAN,
    midambleShiftAndBurstType
                                       MidambleShiftAndBurstType
}
                                    SEQUENCE {
IndividualTimeslotInfo-VHCR ::=
                                       TimeslotNumber,
    timeslotNumber
    tfci-Existence
                                       BOOLEAN,
    midambleShiftAndBurstType-VHCR
                                       MidambleShiftAndBurstType-VHCR
{\tt IndividualTimeslotInfo-LCR-r4} \ ::= \ \ {\tt SEQUENCE} \ \big\{
    timeslotNumber
                                        TimeslotNumber-LCR-r4,
    tfci-Existence
                                        BOOLEAN,
   midambleShiftAndBurstType
                                        MidambleShiftAndBurstType-LCR-r4,
                                       ENUMERATED { mod-QPSK, mod-8PSK },
ENUMERATED { zero, one, sixteenOverSF },
    modulation
    ss-TPC-Symbols
    additionalSS-TPC-Symbols
                                                           OPTIONAL
                                       INTEGER (1..15)
}
IndividualTimeslotInfo-LCR-r4-ext ::=
                                           SEQUENCE {
-- timeslotNumber and tfci-Existence is taken from IndividualTimeslotInfo.
-- midambleShiftAndBurstType in IndividualTimeslotInfo shall be ignored.
   midambleShiftAndBurstType
                                       MidambleShiftAndBurstType-LCR-r4,
                                        ENUMERATED { mod-QPSK, mod-8PSK },
    modulation
```

```
ENUMERATED { zero, one, sixteenOverSF }
   ss-TPC-Symbols
}
IndividualTimeslotInfo-r7 ::=
                                 SEQUENCE {
   timeslotNumber
                                       TimeslotNumber,
    tfci-Existence
                                       BOOLEAN,
   midambleShiftAndBurstType
                                      MidambleShiftAndBurstType-r7
}
IndividualTS-Interference ::=
                                 SEQUENCE {
                                  TimeslotNumber,
   timeslot
   ul-TimeslotInterference
                                       TDD-UL-Interference
}
IndividualTS-InterferenceList ::= SEQUENCE (SIZE (1..maxTS)) OF
                                      IndividualTS-Interference
                                   ENUMERATED {
ITP ::=
                                       mode0, mode1 }
NidentifyAbort ::= INTEGER (1..128)
MAC-DTX-Cycle-10ms ::=
                                   ENUMERATED {
                                       sub-frames-5,
                                       sub-frames-10.
                                       sub-frames-20,
                                       spare1 }
MAC-DTX-Cycle-2ms ::=
                                   ENUMERATED {
                                       sub-frames-1,
                                       sub-frames-4,
                                       sub-frames-5,
                                       sub-frames-8,
                                       sub-frames-10,
                                       sub-frames-16,
                                       sub-frames-20,
                                       spare1 }
MAC-InactivityThreshold ::=
                                   ENUMERATED {
                                       e-dch-tti-1,
                                       e-dch-tti-2,
                                       e-dch-tti-4,
                                       e-dch-tti-8,
                                       e-dch-tti-16,
                                       e-dch-tti-32,
                                       e-dch-tti-64,
                                       e-dch-tti-128,
                                       e-dch-tti-256,
                                       e-dch-tti-512,
                                       e-dch-tti-Infinity,
                                       spare5,
                                       spare4,
                                       spare3,
                                       spare2,
                                       spare1 }
MaxAllowedUL-TX-Power ::=
                                  INTEGER (-50..33)
MaxAvailablePCPCH-Number ::=
                                  INTEGER (1..64)
                                  INTEGER (0..3)
MaxPowerIncrease-r4 ::=
MaxTFCI-Field2Value ::=
                                   INTEGER (1..1023)
                              SEQUENCE {
Measurement-Feedback-Info ::=
                                   CHOICE {
   modeSpecificInfo
                                   SEQUENCE {
        fdd
                                    MeasurementPowerOffset,
Feedback-cycle,
           measurementPowerOffset
           feedback-cycle
           cqi-RepetitionFactor
                                          CQI-RepetitionFactor,
                                          DeltaCQI
           deltaCQI
        },
        tdd
                                       NULL
    }
}
Measurement-Feedback-Info-r7 ::= SEQUENCE {
   modeSpecificInfo CHOICE {
                                       SEQUENCE {
       fdd
```

```
measurementPowerOffset
                                                                                                                                              MeasurementPowerOffset,
                                       feedback-cycle
                                                                                                                                              Feedback-cycle-r7,
                                       cqi-RepetitionFactor
                                                                                                                                              CQI-RepetitionFactor,
                                       deltaCOI
                                                                                                                                              DeltaCOI
                          tdd
                                                                                                                                 NULL
             }
}
MidambleConfigurationBurstType1and3 ::= ENUMERATED {ms4, ms8, ms16}
MidambleConfigurationBurstType1 ::= ENUMERATED {ms4, ms8, ms16}
MidambleConfigurationBurstType2 ::=
                                                                                                                                 ENUMERATED {ms3, ms6}
MidambleConfigurationBurstType2-VHCR ::=
                                                                                                                                                           ENUMERATED {ms4, ms8}
MidambleShiftAndBurstType ::=
                                                                                                                    SEQUENCE {
             burstType
                                                                                                                                              SEQUENCE {
                          type1
                                       \verb|midamble| Configuration BurstType| 1 and 3 \verb|Midamble| Configuration BurstType| 1 and 3 \verb|Midamble| Configuration BurstType| 2 and 3 a
                                       \verb|midambleAllocationMode| \\
                                                                                                                                                            CHOICE {
                                                    defaultMidamble
                                                                                                                                                                        NULL,
                                                    commonMidamble
                                                                                                                                                                        NULL,
                                                    ueSpecificMidamble
                                                                                                                                                                        SEOUENCE {
                                                                midambleShift
                                                                                                                                                                                     MidambleShiftLong
                                       }
                          },
                                                                                                                                               SEQUENCE {
                                       \verb|midamble| Configuration BurstType2|
                                                                                                                                                           MidambleConfigurationBurstType2,
                                       midambleAllocationMode
                                                                                                                                                            CHOICE {
                                                    defaultMidamble
                                                                                                                                                                        NULL,
                                                   commonMidamble
                                                                                                                                                                        NULL.
                                                    ue Specific {\tt Midamble}
                                                                                                                                                                        SEQUENCE {
                                                                midambleShift
                                                                                                                                                                                     MidambleShiftShort
                                       }
                                                                                                                                              SEQUENCE {
                                       midambleAllocationMode
                                                                                                                                                           CHOICE {
                                                    defaultMidamble
                                                                                                                                                                        NULL
                                                    ue Specific {\tt Midamble}
                                                                                                                                                                        SEQUENCE {
                                                                midambleShift
                                                                                                                                                                                     MidambleShiftLong
                                       }
                          }
}
{\tt MidambleShiftAndBurstType-VHCR} \ ::= \ {\tt SEQUENCE} \ \big\{
             burstType
                                                                                                                                  CHOICE {
                                                                                                                                               SEQUENCE {
                                       \verb|midamble| Configuration BurstType| 1 and 3 \verb| Midamble| Configuration BurstType| 1 and 3 \verb|, find the following the followin
                                                                                                                                                           CHOICE {
                                       midambleAllocationMode
                                                    {\tt defaultMidamble}
                                                                                                                                                                        NULL,
                                                    commonMidamble
                                                                                                                                                                        NULL,
                                                    ueSpecificMidamble
                                                                                                                                                                        SEQUENCE {
                                                                midambleShift
                                                                                                                                                                                     MidambleShiftLong
                          },
                          type2
                                                                                                                                               SEQUENCE {
                                       \verb|midamble| Configuration BurstType2|
                                                                                                                                                           MidambleConfigurationBurstType2-VHCR,
                                                                                                                                                            CHOICE {
                                       midamble Allocation Mode
                                                    defaultMidamble
                                                                                                                                                                        NULL,
                                                    commonMidamble
                                                                                                                                                                        NULL,
                                                   ueSpecificMidamble
                                                                                                                                                                        SEQUENCE {
                                                                midambleShift
                                                                                                                                                                                      MidambleShiftShort-VHCR
                                       }
                          },
                                                                                                                                               SEOUENCE {
                          type3
                                       CHOICE {
                                       midambleAllocationMode
                                                    defaultMidamble
                                                                                                                                                                        NULL,
                                                                                                                                                                        SEQUENCE {
                                                    ueSpecificMidamble
```

```
midambleShift
                                                                                                                                                                                                 MidambleShiftLong
                                                       }
                                         }
                               -- mbsfnBurstType4 is only used DL
                            mbsfnBurstType4
                                                                                                                                                        NULL
}
MidambleShiftAndBurstType-r7 ::=
                                                                                                                            SEQUENCE {
            burstType
                                                                                                                                         CHOICE {
                                                                                                                                                        SEQUENCE {
                            type1
                                         \verb|midamble| Configuration BurstType| 1 and 3 \verb|Midamble| Configuration BurstType| 1 and 3 \verb|, in the configuration burstType| 2 and 3 \verb|Midamble| Configuration burstType| 2 and 3                                                                                                                                                                       CHOICE {
                                         midambleAllocationMode
                                                       defaultMidamble
                                                                                                                                                                                   NULL,
                                                       commonMidamble
                                                                                                                                                                                   NULL,
                                                       ueSpecificMidamble
                                                                                                                                                                                   SEQUENCE {
                                                                     midambleShift
                                                                                                                                                                                                MidambleShiftLong
                                         }
                            },
                                                                                                                                                        SEQUENCE {
                            type2
                                         \verb|midamble| Configuration BurstType2|
                                                                                                                                                                     MidambleConfigurationBurstType2,
                                         midambleAllocationMode
                                                                                                                                                                      CHOICE {
                                                       defaultMidamble
                                                                                                                                                                                   NULL,
                                                       commonMidamble
                                                                                                                                                                                   NULL,
                                                       ueSpecificMidamble
                                                                                                                                                                                   SEQUENCE {
                                                                     midambleShift
                                                                                                                                                                                                 MidambleShiftShort
                                         }
                                                                                                                                                        SEQUENCE {
                            type3
                                         CHOICE {
                                         midambleAllocationMode
                                                       defaultMidamble
                                                                                                                                                                                   NULL,
                                                       ueSpecificMidamble
                                                                                                                                                                                   SEQUENCE {
                                                                    midambleShift
                                                                                                                                                                                                MidambleShiftLong
                                         }
                               -- mbsfnBurstType4 is only used DL
                            mbsfnBurstType4
                                                                                                                                                       NULL
              }
}
MidambleShiftAndBurstType-DL ::=
                                                                                                                                          SEQUENCE {
              burstType
                                                                                                                                          CHOICE {
                            type1
                                                                                                                                                        SEQUENCE {
                                         midambleAllocationMode
                                                                                                                                                                     CHOICE {
                                                       defaultMidamble
                                                                                                                                                                                   NULL,
                                                                                                                                                                                   NULL,
                                                       commonMidamble
                                                       ueSpecificMidamble
                                                                                                                                                                                   SEQUENCE {
                                                                     midambleShift
                                                                                                                                                                                                 MidambleShiftLong
                                         }
                                                                                                                                                        SEQUENCE {
                            type2
                                         midambleConfigurationBurstType2
                                                                                                                                                                     MidambleConfigurationBurstType2,
                                                                                                                                                                      CHOICE {
                                         midambleAllocationMode
                                                       defaultMidamble
                                                                                                                                                                                   NULL,
                                                       {\tt commonMidamble}
                                                                                                                                                                                   NULL,
                                                       ueSpecificMidamble
                                                                                                                                                                                   SEQUENCE {
                                                                                                                                                                                                MidambleShiftShort
                                                                     midambleShift
                                         }
                            }
              }
}
MidambleShiftAndBurstType-DL-VHCR ::= SEQUENCE
                                                                                                                                          CHOICE
             burstType
                                                                                                                                                       SEQUENCE {
                          type1
                                         \verb|midamble| Configuration BurstType| 1 and 3 \verb|Midamble| Configuration BurstType| 1 and 3 \verb|, in the configuration BurstType| 2 and 3 \verb|Midamble| Configuration BurstType| 2 and 3                                          midambleAllocationMode
                                                                                                                                                                      CHOICE {
                                                       defaultMidamble
                                                                                                                                                                                   NULL,
                                                       commonMidamble
                                                                                                                                                                                   NULL,
                                                                                                                                                                                   SEQUENCE {
                                                       ueSpecificMidamble
```

```
midambleShift
                                                         MidambleShiftLong
                }
            }
        },
                                             SEQUENCE {
            midambleConfigurationBurstType2
                                                 MidambleConfigurationBurstType2-VHCR,
                                                 CHOICE {
            midambleAllocationMode
                defaultMidamble
                                                     NULL,
                {\tt commonMidamble}
                                                     NULL,
                {\tt ueSpecificMidamble}
                                                     SEQUENCE {
                    midambleShift
                                                         MidambleShiftShort-VHCR
           }
       }
    }
}
MidambleShiftAndBurstType-LCR-r4 ::=
                                      SEOUENCE {
    midambleAllocationMode
                                         CHOICE {
        defaultMidamble
                                             NULL,
        commonMidamble
                                             NULL.
        ueSpecificMidamble
                                             SEQUENCE {
            midambleShift
                                                 INTEGER (0..15)
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration
                                        INTEGER (1..8)
}
MidambleShiftAndBurstType-EDCH ::= SEQUENCE {
    burstType
                                        CHOICE {
                                            SEQUENCE {
        type1
            \verb|midamble| Configuration BurstType1|
                                                 MidambleConfigurationBurstType1,
            midambleAllocationMode
                                                 CHOICE {
                                                     NULL,
                defaultMidamble
                commonMidamble
                                                     NULL,
                ueSpecificMidamble
                                                     SEQUENCE {
                    midambleShift
                                                         MidambleShiftLong
            }
        },
                                             SEQUENCE {
        type2
            \verb|midamble| Configuration BurstType2|
                                                 MidambleConfigurationBurstType2,
                                                 CHOICE {
            midambleAllocationMode
                defaultMidamble
                                                    NULL,
                                                     NULL,
                commonMidamble
                ueSpecificMidamble
                                                     SEQUENCE {
                    midambleShift
                                                         MidambleShiftShort
            }
        }
    }
}
MidambleShiftLong ::=
                                   INTEGER (0..15)
MidambleShiftShort ::=
                                    INTEGER (0..5)
MidambleShiftShort-VHCR ::=
                                    INTEGER (0..7)
MIMO-N-M-Ratio ::=
                                     ENUMERATED {
                                         mnm12, mnm23, mnm34, mnm45, mnm56,
                                         mnm67, mnm78, mnm89, mnm910, mnm11 }
                                     ENUMERATED {
MIMO-Operation ::=
                                        start, continue }
MIMO-Parameters-r7 ::=
                                     SEQUENCE {
                                        MIMO-Operation,
    mimoOperation
    mimoN-M-Ratio
                                         MIMO-N-M-Ratio
                                                                         OPTIONAL,
    mimoPilotConfiguration
                                        MIMO-PilotConfiguration
                                                                          OPTIONAL
MIMO-Parameters-v7f0ext ::=
                                    MIMO-PilotConfiguration-v7f0ext
MIMO-Parameters-v7g0ext ::= SEQUENCE {
    precodingWeightSetRestriction
                                         ENUMERATED { true }
                                                                        OPTIONAL
```

```
}
MIMO-PilotConfiguration ::= SEQUENCE {
secondCPICH-Pattern CHOICE
normalPattern NUI
diversityPattern SEQ
                                  CHOICÈ {
                                       NULL,
                                          SEQUENCE {
           channelisationCode
                                              ChannelisationCode256
    }
}
MIMO-PilotConfiguration-v7f0ext ::= SEQUENCE {
    s-cpich-PowerOffset-Mimo S-CPICH-PowerOffset-MIMO OPTIONAL
                                 ENUMERATED {
MinimumSpreadingFactor ::=
                                      sf4, sf8, sf16, sf32,
                                      sf64, sf128, sf256 }
MultiCodeInfo ::=
                                  INTEGER (1..16)
-- These IEs are applied for 1.28 Mcps TDD only
Multi-frequencyInfo-LCR-r7 ::= SEQUENCE {
    -- If the secondary frequency is present, it indicates working frequency
   secondFrequencyInfo FrequencyInfoTDD OPTIONAL, fPachFrequencyInfo FrequencyInfoTDD OPTIONAL,
    --If a cell UpPCH uses other uplink service timeslot, it indicates the UpPCH position
                                      UpPCHposition-LCR
   upPCHpositionInfo
                                                                     OPTIONAL
}
                                  INTEGER (0..7)
N-EOT ::=
N-GAP ::=
                                   ENUMERATED {
                                      f2, f4, f8 }
N-PCH ::=
                                   INTEGER (1..8)
                                  INTEGER (1..8)
N-StartMessage ::=
NB01 ::=
                                  INTEGER (0..50)
NewTiming ::=
                                   SEQUENCE {
   enablingDelay
                                   EnablingDelay,
   ue-dtx-drx-Offset
                                      UE-DTX-DRX-Offset
                                  INTEGER (1..64)
NF-Max ::=
Non-ScheduledTransGrantInfoTDD ::= CHOICE {
                                   SEQUENCE {
                                      BIT STRING (SIZE (13)),
       timeslotResourceRelatedInfo
       powerResourceRelatedInfo
                                          INTEGER (1..32),
       activationTime
                                         ActivationTime,
       repetitionPeriodAndLength ActivationTime,
RepetitionPeriodAndLength
                                                                 OPTIONAL,
       codeResourceInfo
                                         UL-TS-ChannelisationCode
    tdd128
                                      SEQUENCE {
                                      INTEGER (1..8) OPTIONAL,
INTEGER (4..15) OPTIONAL,
       n-E-UCCH
       n-E-HICH
       powerResourceRelatedInfo
       activationTime
                                         ActivationTime,
                                          INTEGER (0..1),
       repetitionPeriodAndLength
                                         RepetitionPeriodAndLength
                                                                  OPTIONAL.
        codeResourceInfo
                                          UL-TS-ChannelisationCode,
        e-HICH-Info
                                         SEQUENCE {
           timeslotNumber
                                              TimeslotNumber-LCR-r4,
           midambleAllocationMode
defaultMidary 7
           channelisation-Code
                                              HS-ChannelisationCode-LCR,
                                             CHOICE {
                                             NULL,
               ueSpecificMidamble
                                                  INTEGER (0..15)
           midambleConfiguration INTEGER (1..8), signatureSequenceGroupIndex INTEGER (0..19)
        }
```

```
}
Non-ScheduledTransGrantInfoTDD-ext ::= CHOICE {
        tdd384-768
                                                                              NULL,
        tdd128
                                                                                      SEQUENCE {
              t-SI-nst
                                                                                              ENUMERATED {
                                                                                                      everyEDCHTTI, ms20, ms40, ms60, ms80, ms160,
                                                                                                                                                             OPTIONAL
}
                                                                    INTEGER (1..maxDPDCH-UL)
NumberOfDPDCH ::=
NumberOfFBI-Bits ::=
                                                                     INTEGER (1..2)
NumberOfTPC-Bits ::=
                                                                     ENUMERATED { tpc4 }
OpenLoopPowerControl-TDD ::= SEQUENCE {
                                                                            PrimaryCCPCH-TX-Power,
       primaryCCPCH-TX-Power
        -- alpha, prach-ConstantValue, dpch-ConstantValue and pusch-ConstantValue
        -- shall be ignored in 1.28Mcps TDD mode.
                                                                             Alpha
                                                                                                                                    OPTIONAL,
       alpha
                                                                             ConstantValueTdd,
       prach-ConstantValue
                                                                            ConstantValueTdd,
        doch-ConstantValue
                                                                             ConstantValueTdd
                                                                                                                                  OPTIONAL
       pusch-ConstantValue
OpenLoopPowerControl-IPDL-TDD-r4 ::= SEQUENCE {
       ipdl-alpha
                                                                             Alpha,
       maxPowerIncrease
                                                                              MaxPowerIncrease-r4
PagingIndicatorLength ::= ENUMERATED {
                                                                             pi4, pi8, pi16 }
                                                                    INTEGER (0..7)
PC-Preamble ::=
                                                                      ENUMERATED {
PCP-Length ::=
                                                                            as0, as8 }
PCPCH-ChannelInfo ::=
                                                                      SEQUENCE {
                                                                      INTEGER (0..79),
      pcpch-UL-ScramblingCode
       pcpch-DL-ChannelisationCode
                                                                              INTEGER (0..511),
       pcpch-DL-ScramblingCode
                                                                            SecondaryScramblingCode
                                                                                                                                                  OPTIONAL,
       pcp-Length
                                                                             PCP-Length,
                                                                             UCSM-Info
                                                                                                                                                    OPTIONAL
       ucsm-Info
}
PCPCH-ChannelInfoList ::=
                                                                      SEQUENCE (SIZE (1..maxPCPCHs)) OF
                                                                             PCPCH-ChannelInfo
PCPICH-UsageForChannelEst ::=
                                                                      ENUMERATED {
                                                                          mayBeUsed,
                                                                             shallNotBeUsed }
PDSCH-CapacityAllocationInfo ::= SEQUENCE {
       -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
        -- pdsch-PowerControlling is conditional on now con-
       pdsch-PowerControlInfo
pdsch-AllocationPeriodInfo
configuration

old-Configuration

CHOICE {

CH
                                                                                                                                                 OPTIONAL.
                                                                                             TFCS-IdentityPlain
                                                                                                                                                                    DEFAULT 1,
                      tfcs-ID
                                                                                             PDSCH-Identity
                      pdsch-Identity
               new-Configuration
                                                                                     SEQUENCE {
                     pdsch-Info
                                                                                            PDSCH-Info,
                                                                                                                                       OPTIONAL
                       pdsch-Identity
                                                                                             PDSCH-Identity
                }
}
PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
       pdsch-AllocationPeriodInfo AllocationPeriodInfo,
        configuration
                                                                             CHOICE {
              old-Configuration
                                                                                     SEQUENCE {
                                                                                              TFCS-IdentityPlain
                                                                                                                                                                    DEFAULT 1,
                       tfcs-ID
```

```
pdsch-Identity
                                           PDSCH-Identity
       new-Configuration
                                     SEQUENCE {
                                           PDSCH-Info-r4,
          pdsch-Info
           pdsch-Identity
                                             PDSCH-Identity
                                                                       OPTIONAL.
           pdsch-PowerControlInfo
                                            PDSCH-PowerControlInfo
                                                                      OPTIONAL
   }
}
PDSCH-CapacityAllocationInfo-r7 ::= SEQUENCE {
   pdsch-AllocationPeriodInfo AllocationPeriodInfo,
   configuration
                                     CHOICE {
       old-Configuration
                                         SEQUENCE {
                                             TFCS-IdentityPlain
           tfcs-ID
                                                                              DEFAULT 1,
           pdsch-Identity
                                             PDSCH-Identity
       },
                                       SEQUENCE {
       new-Configuration
                                           PDSCH-Info-r7,
          pdsch-Info
           pdsch-Identity
                                             PDSCH-Identity
                                                                       OPTIONAL,
           pdsch-PowerControlInfo
                                            PDSCH-PowerControlInfo
                                                                       OPTIONAL
}
PDSCH-CodeInfo ::=
                                 SEQUENCE {
   spreadingFactor
                                    SF-PDSCH,
   codeNumber
                                     CodeNumberDSCH,
   multiCodeInfo
                                     MultiCodeInfo
}
PDSCH-CodeInfoList ::=
                                  SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
                                     PDSCH-CodeInfo
PDSCH-CodeMap ::=
                                  SEQUENCE {
   spreadingFactor
                                  SF-PDSCH,
   multiCodeInfo
                                     MultiCodeInfo,
   codeNumberStart
                                     CodeNumberDSCH,
   codeNumberStop
                                     CodeNumberDSCH
}
PDSCH-CodeMapList ::=
                                  SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
                                     PDSCH-CodeMap
PDSCH-CodeMapping ::=
                                  SEQUENCE {
   dl-ScramblingCode
                                     SecondaryScramblingCode
                                                                      OPTIONAL,
                                     CHOICE {
   signallingMethod
                                      CodeRange,
       codeRange
       tfci-Range
                                         DSCH-MappingList,
       explicit-config
                                        PDSCH-CodeInfoList,
       replace
                                         ReplacedPDSCH-CodeInfoList
   }
}
PDSCH-Identity ::=
                                INTEGER (1..hiPDSCHidentities)
PDSCH-Info ::=
                                  SEQUENCE {
  tfcs-ID
                                   TFCS-IdentityPlain
                                                                      DEFAULT 1,
   commonTimeslotInfo
                                     CommonTimeslotInfo
                                                                       OPTIONAL,
   pdsch-TimeslotsCodes
                                     DownlinkTimeslotsCodes
                                                                       OPTIONAL
PDSCH-Info-r4 ::=
                                     SEQUENCE {
                                                                      DEFAULT 1,
   tfcs-ID
                                     TFCS-IdentityPlain
   commonTimeslotInfo
                                     CommonTimeslotInfo
                                                                       OPTIONAL,
   tddOption
                                     CHOICE {
       tdd384
                                      SEQUENCE {
          pdsch-TimeslotsCodes
                                            DownlinkTimeslotsCodes
                                                                      OPTIONAL
       tdd128
                                       SEQUENCE {
          pdsch-TimeslotsCodes
                                            DownlinkTimeslotsCodes-LCR-r4 OPTIONAL
   }
}
PDSCH-Info-r7 ::=
                                    SEQUENCE {
                                                                      DEFAULT 1,
   tfcs-ID
                                     TFCS-IdentityPlain
   commonTimeslotInfo
                                     CommonTimeslotInfo
                                                                       OPTIONAL,
```

```
tddOption
                                       CHOICE {
                                           SEQUENCE {
       tdd384
           pdsch-TimeslotsCodes
                                               DownlinkTimeslotsCodes OPTIONAL
        tdd768
                                           SEQUENCE {
          pdsch-TimeslotsCodes
                                             DownlinkTimeslotsCodes-VHCR
                                                                              OPTIONAL
                                          SEQUENCE {
        t.dd128
           pdsch-TimeslotsCodes
                                              DownlinkTimeslotsCodes-LCR-r4 OPTIONAL
    }
}
PDSCH-Info-LCR-r4 ::=
                                   SEQUENCE {
   tfcs-ID
                                       TFCS-IdentityPlain
                                                                          DEFAULT 1,
                                       CommonTimeslotInfo
                                                                          OPTIONAL,
    commonTimeslotInfo
   pdsch-TimeslotsCodes
                                       DownlinkTimeslotsCodes-LCR-r4
                                                                          OPTIONAL
}
PDSCH-PowerControlInfo ::=
                                   SEQUENCE {
    tpc-StepSizeTDD
                                                                           OPTIONAL,
                                    TPC-StepSizeTDD
    ul-CCTrChTPCList
                                       UL-CCTrChTPCList
                                                                           OPTIONAL
}
PDSCH-SHO-DCH-Info ::=
                                   SECUENCE {
   dsch-RadioLinkIdentifier
                                   DSCH-RadioLinkIdentifier,
    rl-IdentifierList
                                      RL-IdentifierList
                                                                           OPTIONAL
}
PDSCH-SysInfo ::=
                                   SEQUENCE {
   pdsch-Identity
                                      PDSCH-Identity,
   pdsch-Info
                                       PDSCH-Info,
    dsch-TFS
                                       TransportFormatSet
                                                                           OPTIONAL,
    dsch-TFCS
                                                                           OPTIONAL
                                       TFCS
}
PDSCH-SysInfo-VHCR-r7 ::=
                                   SEQUENCE {
   pdsch-Identity
                                       PDSCH-Identity,
    pdsch-Info
                                       PDSCH-Info-r7,
    dsch-TransportChannelsInfo
                                       DSCH-TransportChannelsInfo
                                                                           OPTIONAL.
    dsch-TFCS
                                       TFCS
                                                                           OPTIONAL
}
PDSCH-SysInfo-HCR-r5 ::=
                                   SEQUENCE {
   pdsch-Identity
                                       PDSCH-Identity,
    pdsch-Info
                                       PDSCH-Info,
                                       DSCH-TransportChannelsInfo
                                                                          OPTIONAL,
    dsch-TransportChannelsInfo
    dsch-TFCS
                                       TFCS
                                                                           OPTIONAL
PDSCH-SysInfo-LCR-r4 ::=
                                   SEQUENCE {
   pdsch-Identity
                                      PDSCH-Identity,
   pdsch-Info
                                       PDSCH-Info-LCR-r4,
                                                                           OPTIONAL,
    dsch-TFS
                                       TransportFormatSet
    dsch-TFCS
                                       TFCS
                                                                           OPTIONAL
}
PDSCH-SysInfoList ::=
                                   SEQUENCE (SIZE (1..maxPDSCH)) OF
                                       PDSCH-SysInfo
PDSCH-SysInfoList-VHCR-r7 ::=
                                   SEQUENCE (SIZE (1..maxPDSCH)) OF PDSCH-SysInfo-VHCR-r7
PDSCH-SysInfoList-HCR-r5 ::=
                                   SEQUENCE (SIZE (1..maxPDSCH)) OF PDSCH-SysInfo-HCR-r5
PDSCH-SysInfoList-LCR-r4 ::=
                                   SEQUENCE (SIZE (1..maxPDSCH)) OF
                                       PDSCH-SysInfo-LCR-r4
PDSCH-SysInfoList-SFN ::=
                                   SEQUENCE (SIZE (1..maxPDSCH)) OF
                                       SEQUENCE {
    pdsch-SysInfo
                                           PDSCH-SysInfo,
    sfn-TimeInfo
                                           SFN-TimeInfo
                                                                          OPTIONAL
}
PDSCH-SysInfoList-SFN-HCR-r5 ::=
                                           SEQUENCE (SIZE (1..maxPDSCH)) OF
                                       SEQUENCE {
    pdsch-SysInfo
                                           PDSCH-SysInfo-HCR-r5,
    sfn-TimeInfo
                                           SFN-TimeInfo
                                                                          OPTIONAL
}
```

```
SEQUENCE (SIZE (1..maxPDSCH)) OF
PDSCH-SysInfoList-SFN-LCR-r4 ::=
                                        SEQUENCE {
    pdsch-SysInfo
                                            PDSCH-SysInfo-LCR-r4,
    sfn-TimeInfo
                                            SFN-TimeInfo
                                                                             OPTIONAL
                                    ENUMERATED {
PersistenceScalingFactor ::=
                                        psf0-9, psf0-8, psf0-7, psf0-6,
                                        psf0-5, psf0-4, psf0-3, psf0-2 }
                                    SEQUENCE (SIZE (1..\maxASCpersist)) OF
PersistenceScalingFactorList ::=
                                        PersistenceScalingFactor
PI-CountPerFrame ::=
                                    ENUMERATED {
                                        e18, e36, e72, e144 }
PichChannelisationCodeList-LCR-r4 ::= SEQUENCE (SIZE (1..2)) OF
                                            DL-TS-ChannelisationCode
                                        SEQUENCE {
PICH-ForHSDPASupportedPaging ::=
                                           PICH-Info,
    hsdpa-AssociatedPichInfo
    hs-pdschChannelisationCode
                                            INTEGER (1..15)
}
PICH-Info ::=
                                    CHOICE {
    fdd
                                        SEQUENCE {
        channelisationCode256
                                            ChannelisationCode256,
        pi-CountPerFrame
                                            PI-CountPerFrame,
        sttd-Indicator
                                            BOOLEAN
                                        SEQUENCE {
        channelisationCode
                                            TDD-PICH-CCode
                                                                             OPTIONAL,
        timeslot
                                            TimeslotNumber
                                                                             OPTIONAL,
                                            MidambleShiftAndBurstType,
        midambleShiftAndBurstType
        repetitionPeriodLengthOffset
                                            RepPerLengthOffset-PICH
                                                                             OPTIONAL,
                                            PagingIndicatorLength
       pagingIndicatorLength
                                                                            DEFAULT pi4,
                                                                             DEFAULT f4,
       n-GAP
                                            N-GAP
                                            N-PCH
                                                                            DEFAULT 2
       n-PCH
    }
}
PICH-Info-HCR-VHCR-r7 ::=
                                  SEQUENCE {
                                        CHOICE {
    channelisationCode
       tdd384
                                            TDD-PICH-CCode,
       tdd768
                                            TDD768-PICH-CCode
           OPTIONAL,
    timeslot
                                        TimeslotNumber
                                                                         OPTIONAL,
    midambleShiftAndBurstType
                                        MidambleShiftAndBurstType,
    repetitionPeriodLengthOffset
                                        RepPerLengthOffset-PICH
                                                                        OPTIONAL,
    pagingIndicatorLength
                                        PagingIndicatorLength
                                                                         DEFAULT pi4,
    n-GAP
                                        N-GAP
                                                                         DEFAULT f4,
    n-PCH
                                        N-PCH
                                                                        DEFAULT 2
PICH-Info-LCR-r4 ::=
                                    SEQUENCE {
    timeslot
                                        TimeslotNumber-LCR-r4
                                                                             OPTIONAL,
   pichChannelisationCodeList-LCR-r4
                                        PichChannelisationCodeList-LCR-r4,
                                        MidambleShiftAndBurstType-LCR-r4,
   midambleShiftAndBurstType
                                      Midambleshillong.
RepPerLengthOffset-PICH
   repetitionPeriodLengthOffset
                                                                             OPTIONAL.
                                                                        DEFAULT pi4,
    pagingIndicatorLength
                                        PagingIndicatorLength
    n-GAP
                                        N-GAP
                                                                         DEFAULT f4,
   n-PCH
                                        N-PCH
                                                                         DEFAULT 2
PICH-PowerOffset ::=
                                    INTEGER (-10..5)
PilotBits128 ::=
                                    ENUMERATED {
                                        pb4, pb8 }
PilotBits256 ::=
                                    ENUMERATED {
                                        pb2, pb4, pb8 }
    -- Actual measurement power offset value = IE value * 0.5
\label{eq:measurementPowerOffset} \texttt{MeasurementPowerOffset} ::= \\ \texttt{INTEGER} \ (\texttt{-12..26})
                                    SEQUENCE {
PLCCH-Info
               : : =
   plcchSequenceNumber
                                    INTEGER(1..14),
```

```
timeslotNumber TimeslotNumber-LCR-r4, channelisationCode DL-TS-ChannelisationCode, tpcCommandTargetRate TPC-CommandTargetRate
}
PositionFixedOrFlexible ::=
                                  ENUMERATED {
                                        fixed.
                                        flexible }
PowerControlAlgorithm ::=
                                    CHOICE {
  algorithm1
                                       TPC-StepSizeFDD,
    algorithm2
                                        NULL
}
PowerControlGAP ::=
                                    INTEGER (0..255)
PowerOffsetPilot-pdpdch ::=
                                   INTEGER (0..24)
PowerOffsetTPC-pdpdch ::=
                                   INTEGER (0..24)
PowerRampStep ::=
                                    INTEGER (1..8)
PRACH-ChanCodes-LCR-r4 ::=
                                    SEQUENCE (SIZE (1..4)) OF
                                        TDD-PRACH-CCode-LCR-r4
                                    SEQUENCE (SIZE (1..2)) OF
PRACH-ChanCodes-List-LCR ::=
                                        TDD-PRACH-CCode-LCR-r4
PRACH-Definition-LCR-r4 ::=
                                    SEQUENCE {
                                       TimeslotNumber-PRACH-LCR-r4,
   timeslot
    prach-ChanCodes-LCR
                                        PRACH-ChanCodes-LCR-r4,
   midambleShiftAndBurstType
                                       MidambleShiftAndBurstType-LCR-r4,
                                        FPACH-Info-r4
   fpach-Info
}
PRACH-Information-LCR ::=
                                   SEQUENCE {
                                    TimeslotNumber-PRACH-LCR-r4,
   timeslot
   prach-ChanCodes-list-LCR
midambleShiftAndBurstType
                                        PRACH-ChanCodes-List-LCR,
                                       MidambleShiftAndBurstType-LCR-r4,
    fpach-Info
                                       FPACH-Info-r4
                                                                                         OPTIONAL
PRACH-Information-LCR-List ::= SEQUENCE (SIZE (1..maxPRACH-FPACH)) OF
                                        PRACH-Information-LCR
PRACH-Midamble ::=
                                    ENUMERATED {
                                        direct.
                                        direct-Inverted }
PRACH-Partitioning ::=
                                   CHOICE {
                                       SEQUENCE (SIZE (1..maxASC)) OF
   fdd
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-FDD are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                                            ASCSetting-FDD,
                                        SEQUENCE (SIZE (1..maxASC)) OF
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                                            ASCSetting-TDD
}
PRACH-Partitioning-r7 ::=
                                    CHOICE {
                                        SEQUENCE (SIZE (1..maxASC)) OF
   fdd
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-FDD are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                                           ASCSetting-FDD,
                                        SEQUENCE (SIZE (1..maxASC)) OF
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                                            ASCSetting-TDD-r7
}
PRACH-Partitioning-LCR-r4 ::=
                                    SEQUENCE (SIZE (1..maxASC)) OF
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD-LCR-r4 are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                                           ASCSetting-TDD-LCR-r4
PRACH-PowerOffset ::=
                                    SEQUENCE {
   powerRampStep
                                        PowerRampStep,
```

```
preambleRetransMax
                                          PreambleRetransMax
}
                                       SEQUENCE {
PRACH-RACH-Info ::=
    modeSpecificInfo
                                           CHOICE {
                                             SEQUENCE {
                                                    AvailableSignatures,
             availableSignatures
                                                    SF-PRACH.
             availableSF
                                                  {\tt PreambleScramblingCodeWordNumber,}
             {\tt preambleScramblingCodeWordNumber}
             puncturingLimit
                                                    PuncturingLimit,
                                                  AvailableSubChannelNumbers
             availableSubChannelNumbers
                                            SEQUENCE {
        t dd
                                                  TimeslotNumber,
             timeslot
            timeslot
channelisationCodeList
                                                    TDD-PRACH-CCodeList,
             prach-Midamble
                                                    PRACH-Midamble
}
PRACH-RACH-Info-VHCR-r7 ::=
                                     SEQUENCE {
                                         TimeslotNumber,
    timeslot
    channelisationCodeList
                                            TDD768-PRACH-CCodeList,
                                           PRACH-Midamble
    prach-Midamble
}
PRACH-RACH-Info-LCR-v770ext ::= SEQUENCE {
    e-RUCCH-Sync-UL-Codes-Bitmap
    Sync-UL-Codes-Bitmap
PRACH-RACH-Info-LCR-r4 ::= SEQUENCE {
                                       SYNC-UL-Info-r4,
    sync-UL-Info
    prach-DefinitionList
                                            SEQUENCE (SIZE (1..maxPRACH-FPACH)) OF
                                                PRACH-Definition-LCR-r4
}
PRACH-SystemInformation ::=
                                     SEQUENCE {
                                      PRACH-RACH-Info,
TransportChannelIdentity,
    prach-RACH-Info
    transportChannelIdentity
                                       TransportFormatSet
TFCS
                                                                                  OPTIONAL,
    rach-TransportFormatSet
    rach-TFCS
                                                                                   OPTIONAL,
    prach-Partitioning PRACH-Partitioning OPTIONAL, persistenceScalingFactorList PersistenceScalingFactorList OPTIONAL, ac-To-ASC-MappingTable AC-To-ASC-MappingTable OPTIONAL, modeSpecificInfo CHOICE {
            primaryCPICH-TX-Power PrimaryCPICH-TX-Power constantValue ConstantValue prach-PowerOffset Prach-Transmin ConstantValue
    modeSpecificInfo
        fdd
                                                                                 OPTIONAL.
                                                    ConstantValue OPTIONAL, PRACH-PowerOffset OPTIONAL.
             rach-TransmissionParameters
                                                  RACH-TransmissionParameters OPTIONAL,
                                                    AICH-Info
             aich-Info
                                                                                   OPTIONAL
        },
        tdd
                                                NULL
    }
}
PRACH-SystemInformation-VHCR-r7 ::= SEQUENCE {
                           PRACH-RACH-Info-VHCR-r7,
   prach-RACH-Info
    prach-Partitioning
                                           PRACH-Partitioning-r7
                                                                                   OPTIONAL
}
PRACH-SystemInformation-LCR-r4 ::= SEQUENCE {
   PRACH-RACH-Info-LCR PRACH-Info-LCR-r4, rach-TransportFormatSet-LCR prach-Partitioning-LCR PRACH-Partitioning ICB
   prach-RACH-Info-LCR
                                                                              OPTIONAL,
                                                                            OPTIONAL
                                          PRACH-Partitioning-LCR-r4
PRACH-SystemInformation-LCR-v770ext ::= SEQUENCE {
                                           PRACH-RACH-Info-LCR-v770ext
    prach-RACH-Info-LCR
PRACH-SystemInformationList ::= SEQUENCE (SIZE (1..maxPRACH)) OF
                                           PRACH-SystemInformation
PRACH-SystemInformationList-VHCR-r7 ::= SEQUENCE (SIZE (1..maxPRACH)) OF
                                            PRACH-SystemInformation-VHCR-r7
PRACH-SystemInformationList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPRACH)) OF
```

```
PRACH-SystemInformation-LCR-r4
PRACH-SystemInformationList-LCR-v770ext ::= SEQUENCE (SIZE (1..maxPRACH)) OF
                                         PRACH-SystemInformation-LCR-v770ext
PreambleRetransMax ::=
                                 INTEGER (1..64)
PreambleScramblingCodeWordNumber ::= INTEGER (0..15)
PreDefPhyChConfiguration ::= SEQUENCE {
   dl-CommonInformationPredef UL-DPCH-InfoPredef,
   ul-DPCH-InfoPredef
                                     DL-CommonInformationPredef OPTIONAL
}
PreDefPhyChConfiguration-v770ext ::= SEQUENCE {
  ul-DPCH-InfoPredef
                                     UL-DPCH-InfoPredef-v770ext
PrimaryCCPCH-Info ::=
                                  CHOICE {
                                     SEQUENCE {
   fdd
       tx-DiversityIndicator
                                       BOOLEAN
   tdd
                                     SEQUENCE {
       -- syncCase should be ignored for 1.28Mcps TDD mode
                                         CHOICE {
       syncCase
                                             SEQUENCE {
          syncCase1
              timeslot
                                                 TimeslotNumber
           syncCase2
                                             SEQUENCE {
              timeslotSync2
                                                 TimeslotSync2
                                                                       OPTIONAL,
       cellParametersID
                                         CellParametersID
                                                                       OPTIONAL,
       sctd-Indicator
                                         BOOLEAN
   }
}
PrimaryCCPCH-Info-r4 ::=
                                CHOICE {
                                     SEQUENCE {
   fdd
                                        BOOLEAN
       tx-DiversityIndicator
   tdd
                                      SEQUENCE {
       tddOption
                                         CHOICE {
           tdd384-tdd768
                                             SEQUENCE {
               syncCase
                                                 CHOICE {
                  syncCase1
                                                    SEQUENCE {
                                                         TimeslotNumber
                      timeslot
                   syncCase2
                                                     SEQUENCE {
                                                        TimeslotSync2
                      timeslotSync2
               }
                                                                        OPTIONAL
           tdd128
                                             SEQUENCE {
              tstd-Indicator
                                                 BOOLEAN
       cellParametersID
                                         CellParametersID
                                                                       OPTIONAL,
       sctd-Indicator
                                         BOOLEAN
}
PrimaryCCPCH-Info-LCR-r4 ::=
                                SEQUENCE {
   tstd-Indicator
                                     BOOLEAN,
   cellParametersID
                                      CellParametersID
                                                         OPTIONAL,
   sctd-Indicator
                                     BOOLEAN
}
-- For 1.28Mcps TDD, the following IE includes elements for the PCCPCH Info additional to those
-- in PrimaryCCPCH-Info
PrimaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
   tstd-Indicator
                                     BOOLEAN
PrimaryCCPCH-InfoPost ::=
                                 SEQUENCE {
                                     CHOICE {
   syncCase
       syncCase1
                                         SEQUENCE {
           timeslot
                                             TimeslotNumber
```

```
SEQUENCE {
        syncCase2
           timeslotSync2
                                                TimeslotSync2
    cellParametersID
                                        CellParametersID,
    sctd-Indicator
                                        BOOLEAN
}
PrimaryCCPCH-InfoPostTDD-LCR-r4 ::= SEQUENCE {
   tstd-Indicator
                                      BOOLEAN,
    cellParametersID
                                        CellParametersID,
                                        BOOT.FAN
    sctd-Indicator
}
PrimaryCCPCH-TX-Power ::=
                                   INTEGER (6..43)
PrimaryCPICH-Info ::=
                                    SEQUENCE {
                                       PrimaryScramblingCode
   primaryScramblingCode
PrimaryCPICH-TX-Power ::=
                                    INTEGER (-10..50)
PrimaryScramblingCode ::=
                                    INTEGER (0..511)
PuncturingLimit ::=
                                    ENUMERATED {
                                        pl0-40, pl0-44, pl0-48, pl0-52, pl0-56,
                                        plo-60, plo-64, plo-68, plo-72, plo-76, plo-80, plo-84, plo-88, plo-92, plo-96, pl1 }
PUSCH-CapacityAllocationInfo ::=
                                    SEQUENCE {
                                    CHOICE {
   pusch-Allocation
        pusch-AllocationPending
                                            NULL,
        pusch-AllocationAssignment
                                            SEQUENCE {
           pusch-AllocationPeriodInfo
                                                AllocationPeriodInfo,
            pusch-PowerControlInfo
                                                UL-TargetSIR
                                                                            OPTIONAL,
            configuration
                                                CHOICE {
                old-Configuration
                                                   SEQUENCE {
                                                        TFCS-IdentityPlain
                    tfcs-ID
                                                                                    DEFAULT 1,
                   pusch-Identity
                                                        PUSCH-Identity
                new-Configuration
                                                    SEQUENCE {
                                                        PUSCH-Info,
                   pusch-Info
                    pusch-Identity
                                                        PUSCH-Identity
                                                                          OPTIONAL
                }
           }
        }
    }
}
PUSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
       Pusch-AllocationPending NIII.1
    pusch-Allocation
                                        NULL,
        pusch-AllocationAssignment
                                            SEQUENCE {
           pusch-AllocationPeriodInfo
                                                AllocationPeriodInfo,
            pusch-PowerControlInfo
                                                PUSCH-PowerControlInfo-r4 OPTIONAL,
            configuration
                                                CHOICE {
                old-Configuration
                                                   SEQUENCE {
                                                        TFCS-IdentityPlain
                    tfcs-ID
                                                                                   DEFAULT 1,
                                                        PUSCH-Identity
                    pusch-Identity
                new-Configuration
                                                    SEQUENCE {
                   pusch-Info
                                                       PUSCH-Info-r4,
                    pusch-Identity
                                                        PUSCH-Identity
                                                                          OPTIONAL
           }
        }
    }
}
PUSCH-CapacityAllocationInfo-r7 ::= SEQUENCE {
    pusch-Allocation
                                       CHOICE {
                                         NULL,
        pusch-AllocationPending
        pusch-AllocationAssignment
            pusch-AllocationPeriodInfo
                                                AllocationPeriodInfo,
            pusch-PowerControlInfo
                                                PUSCH-PowerControlInfo-r7 OPTIONAL,
                                                CHOICE {
            configuration
                old-Configuration
                                                    SEQUENCE {
```

```
TFCS-IdentityPlain DEFAULT 1,
                  tfcs-ID
                                                    PUSCH-Identity
                  pusch-Identity
               new-Configuration
                                               SEQUENCE {
                                                PUSCH-Info-VHCR,
                  pusch-Info
                  pusch-Identity
                                                    PUSCH-Identity
                                                                      OPTIONAL
          }
      }
}
                                 INTEGER (1..hiPUSCHidentities)
PUSCH-Identity ::=
PUSCH-Info ::=
                                 SEOUENCE {
                                  TFCS-IdentityPlain
  tfcs-ID
                                                                      DEFAULT 1,
                                                                      OPTIONAL,
   commonTimeslotInfo
                                     CommonTimeslotInfo
                                     UplinkTimeslotsCodes
   pusch-TimeslotsCodes
                                                                       OPTIONAL
PUSCH-Info-r4 ::=
                                 SEQUENCE {
                                    TFCS-IdentityPlain
                                                                      DEFAULT 1,
   tfcs-ID
   commonTimeslotInfo
                                     CommonTimeslotInfo
                                                                       OPTIONAL,
   tddOption
                                     CHOICE {
       tdd384
                                       SEQUENCE {
         pusch-TimeslotsCodes
                                          UplinkTimeslotsCodes
                                                                      OPTIONAL
                                       SEQUENCE {
       tdd128
          pusch-TimeslotsCodes
                                           UplinkTimeslotsCodes-LCR-r4 OPTIONAL
   }
}
   commonTimeslotInfo
PUSCH-Info-VHCR ::=
                                 SEQUENCE {
                                    TFCS-IdentityPlain
CommonTimeslotInfo
                                                                     DEFAULT 1,
                                                                       OPTIONAL,
   pusch-TimeslotsCodes-VHCR
                                     UplinkTimeslotsCodes-VHCR
}
PUSCH-Info-LCR-r4 ::= SEQUENCE {
   tfcs-ID
                                 TFCS-IdentityPlain
                                                                      DEFAULT 1,
                                     CommonTimeslotInfo OPTIONAL,
UplinkTimeslotsCodes-LCR-r4 OPTIONAL
   commonTimeslotInfo
   pusch-TimeslotsCodes
}
PUSCH-PowerControlInfo-r4 ::= SEQUENCE {
   -- The IE ul-TargetSIR corresponds to PRX-PUSCHdes for 1.28Mcps TDD
   -- Actual value PRX-PUSCHdes = (value of IE "ul-TargetSIR" - 120)
   ul-TargetSIR
                                     UL-TargetSIR,
   tddOption
                                     CHOICE {
                                         NULL,
       tdd384
       tdd128
                                         SEQUENCE {
           tpc-StepSize
                                             TPC-StepSizeTDD
                                                                     OPTIONAL
       }
   }
}
PUSCH-PowerControlInfo-r7 ::= SEQUENCE {
   -- The IE ul-TargetSIR corresponds to PRX-PUSCHdes for 1.28Mcps TDD
   -- Actual value PRX-PUSCHdes = (value of IE "ul-TargetSIR" - 120)
   ul-TargetSIR
                                     UL-TargetSIR,
   tddOption
                                     CHOICE {
       tdd384
                                         NULL,
       +44768
                                         NULL,
                                         SEQUENCE {
       tdd128
                                                                     OPTIONAL
          tpc-StepSize
                                            TPC-StepSizeTDD
   }
}
PUSCH-SysInfo ::=
                                 SEQUENCE {
   pusch-Identity
                                  PUSCH-Identity,
                                     PUSCH-Info,
   pusch-Info
   usch-TFS
                                     TransportFormatSet
                                                                      OPTIONAL,
   usch-TFCS
                                                                       OPTIONAL
}
```

```
SEQUENCE {
PUSCH-SysInfo-VHCR ::=
                                        PUSCH-Identity,
   pusch-Identity
   pusch-Info-VHCR
                                       PUSCH-Info-VHCR,
    usch-TransportChannelsInfo
                                       USCH-TransportChannelsInfo
                                                                          OPTIONAL,
   usch-TFCS
                                        TFCS
                                                                            OPTIONAL
}
PUSCH-SysInfo-HCR-r5 ::=
                                           SEQUENCE {
   pusch-Identity
                                      PUSCH-Identity,
    pusch-Info
                                        PUSCH-Info,
   usch-TransportChannelsInfo
                                       USCH-TransportChannelsInfo
                                                                           OPTIONAL,
                                       TFCS
                                                                            OPTIONAL
   usch-TFCS
}
PUSCH-SysInfo-LCR-r4 ::=
                                  SEQUENCE {
                                   PUSCH-Identity,
   pusch-Identity
    pusch-Info
                                        PUSCH-Info-LCR-r4,
   usch-TFS
                                        TransportFormatSet
                                                                           OPTIONAL.
   usch-TFCS
                                                                            OPTIONAL
}
PUSCH-SysInfoList ::=
                                   SEQUENCE (SIZE (1..maxPUSCH)) OF
                                       PUSCH-SysInfo
                                       SEQUENCE (SIZE (1..maxPUSCH)) OF PUSCH-SysInfo-HCR-r5
PUSCH-SysInfoList-HCR-r5 ::=
PUSCH-SysInfoList-LCR-r4 ::=
                                  SEQUENCE (SIZE (1..maxPUSCH)) OF
                                       PUSCH-SysInfo-LCR-r4
PUSCH-SysInfoList-SFN ::=
                                   SEQUENCE (SIZE (1..maxPUSCH)) OF
                                       SEQUENCE {
   pusch-SysInfo
                                           PUSCH-SysInfo,
   sfn-TimeInfo
                                            SFN-TimeInfo
                                                                           OPTIONAL
}
PUSCH-SysInfoList-SFN-HCR-r5 ::=
                                           SEQUENCE (SIZE (1..maxPUSCH)) OF
                                        SEQUENCE {
                                           PUSCH-SysInfo-HCR-r5,
    pusch-SysInfo
    sfn-TimeInfo
                                            SFN-TimeInfo
                                                                           OPTIONAL
}
PUSCH-SysInfoList-SFN-LCR-r4 ::=
                                       SEQUENCE (SIZE (1..maxPUSCH)) OF
                                        SEQUENCE {
    pusch-SysInfo
                                            PUSCH-SysInfo-LCR-r4,
    sfn-TimeInfo
                                            SFN-TimeInfo
                                                                            OPTIONAL
}
PUSCH-SysInfoList-SFN-VHCR ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
                                       SEQUENCE {
    pusch-SysInfo-VHCR
                                           PUSCH-SysInfo-VHCR,
    sfn-TimeInfo
                                            SFN-TimeInfo
                                                                            OPTIONAL
}
                                   SEQUENCE {
RACH-TransmissionParameters ::=
                                       INTEGÈR (1..32),
   mmax
   nb01Min
                                        NB01,
    nb01Max
                                        NB01
}
                                   INTEGER (0..8191)
ReducedScramblingCodeNumber ::=
                                    SEQUENCE {
Reference-Beta-QPSK ::=
   reference-Code-Rate
                                      INTEGER (0..10),
                                       INTEGER (-15..16)
   reference-Beta
}
Reference-Beta-16QAM ::=
                                   SEQUENCE {
   reference-Code-Rate
                                     INTEGER (0..10),
   reference-Beta
                                       INTEGER (-15..16)
}
\label{eq:RepetitionPeriodAndLength} \textbf{RepetitionPeriodAndLength} ::= \\ \textbf{CHOICE} \ \big\{
                                      NULL,
   repetitionPeriod1
    -- repetitionPeriod2 could just as well be NULL also.
                                       INTEGER (1..1),
    repetitionPeriod2
                                       INTEGER (1..3),
    repetitionPeriod4
                                        INTEGER (1..7),
    repetitionPeriod8
                                       INTEGER (1..15),
    repetitionPeriod16
```

```
repetitionPeriod32
                                        INTEGER (1..31),
    repetitionPeriod64
                                         INTEGER (1..63)
}
RepetitionPeriodLengthAndOffset ::= CHOICE {
    repetitionPeriod1
                                         SEQUENCE {
    repetitionPeriod2
        length
                                             NULL.
                                             INTEGER (0..1)
        offset
                                         SEQUENCE {
    repetitionPeriod4
                                             INTEGÈR (1..3),
        length
                                             INTEGER (0..3)
        offset
    repetitionPeriod8
                                         SEQUENCE {
                                            INTEGÈR (1..7),
       length
                                             INTEGER (0..7)
        offset
    repetitionPeriod16
                                         SEQUENCE {
        length
                                             INTEGÈR (1..15),
                                             INTEGER (0..15)
        offset
    repetitionPeriod32
                                         SEQUENCE {
                                             INTEGER (1..31),
        length
        offset
                                             INTEGER (0..31)
    repetitionPeriod64
                                         SEQUENCE {
                                             INTEGER (1..63),
        length
                                             INTEGER (0..63)
        offset
    }
}
\label{eq:ReplacedPDSCH-CodeInfo} \mbox{\tt ReplacedPDSCH-CodeInfo} ::= \mbox{\tt SEQUENCE } \{
    tfci-Field2
                                        MaxTFCI-Field2Value,
    spreadingFactor
                                         SF-PDSCH,
    codeNumber
                                         CodeNumberDSCH,
    multiCodeInfo
                                        MultiCodeInfo
}
ReplacedPDSCH-CodeInfoList ::= SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
                                        ReplacedPDSCH-CodeInfo
RepPerLengthOffset-PICH ::=
                                    CHOICE {
                                         INTEGER (0..3),
    rpp4-2
    rpp8-2
                                         INTEGER (0..7),
    rpp8-4
                                         INTEGER (0..7),
    rpp16-2
                                         INTEGER (0..15),
                                         INTEGER (0..15),
    rpp16-4
    rpp32-2
                                         INTEGER (0..31),
                                        INTEGER (0..31),
    rpp32-4
    rpp64-2
                                         INTEGER (0..63),
                                        INTEGER (0..63)
    rpp64-4
}
RepPerLengthOffset-MICH ::=
                                  CHOICE {
    rpp4-2
                                         INTEGER (0..3),
    rpp8-2
                                         INTEGER (0..7),
    rpp8-4
                                         INTEGER (0..7),
    rpp16-2
                                         INTEGER (0..15),
    rpp16-4
                                        INTEGER (0..15),
                                         INTEGER (0..31),
    rpp32-2
    rpp32-4
                                         INTEGER (0..31),
                                         INTEGER (0..63),
    rpp64-2
    rpp64-4
                                         INTEGER (0..63)
}
RestrictedTrCH ::=
                                    SEQUENCE {
   dl-restrictedTrCh-Type
                                      DL-TrCH-Type,
                                         TransportChannelIdentity,
    restrictedDL-TrCH-Identity
    allowedTFIList
                                        AllowedTFI-List
RestrictedTrCH-InfoList ::=
                                   SEQUENCE (SIZE(1..maxTrCH)) OF
                                        RestrictedTrCH
RL-AdditionInformation ::=
                                  SEQUENCE {
    primaryCPICH-Info
                                        PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL
                                         DL-DPCH-InfoPerRL,
```

```
-- dummy and dummy2 are not used in this version of specification
    -- and the IEs should be ignored.
    dummv
                                        BOOLEAN,
                                        SCCPCH-InfoForFACH
                                                                            OPTIONAL
    dummy2
RL-AdditionInformation-r6 ::= SEQUENCE {
    primaryCPICH-Info Primary cell-Id CellIde
                                   PrimaryCPICH-Info,
    cell-Id
                                        CellIdentity
                                                                            OPTIONAL,
    dl-dpchInfo
                                        CHOICE {
       dl-DPCH-InfoPerRL
                                        DL-DPCH-InfoPerRL-r5,
        dl-FDPCH-InfoPerRL
                                           DL-FDPCH-InfoPerRL-r6
                                E-HICH-Information
    e-HICH-Information
                                                                            OPTIONAL,
    e-RGCH-Information
                                        E-RGCH-Information
                                                                             OPTIONAL
}
{\tt RL-AdditionInformation-r7} \ ::= \ \ {\tt SEQUENCE} \ \big\{
                                      PrimaryCPICH-Info,
   primaryCPICH-Info
    cell-Id
                                        CellIdentity
                                                                             OPTIONAL,
                                        CHOICE {
    dl-dpchInfo
                                        DL-DPCH-InfoPerRL-r5,
        dl-DPCH-InfoPerRL
        dl-FDPCH-InfoPerRL
                                          DL-FDPCH-InfoPerRL-r7
    e-HICH-Information
e-RGCH-Information
                                        E-HICH-Information
                                                                             OPTIONAL.
                                        E-RGCH-Information
                                                                             OPTIONAL
}
RL-AdditionInformation-v6b0ext ::= SEQUENCE {
       sttdIndication
                                       STTDIndication
                                                                            OPTIONAL
RL-AdditionInformationList ::= SEQUENCE (SIZE (1..maxRL-1)) OF
                                        RL-AdditionInformation
RL-AdditionInformationList-r6 ::= SEQUENCE (SIZE (1..maxRL-1)) OF
                                       RL-AdditionInformation-r6
RL-AdditionInformationList-r7 ::= SEQUENCE (SIZE (1..maxRL-1)) OF
                                        RL-AdditionInformation-r7
RL-AdditionInformation-list-v6b0ext ::= SEQUENCE (SIZE (1..maxRL)) OF
                                        RL-AdditionInformation-v6b0ext
RL-IdentifierList ::=
                                    SEQUENCE (SIZE (1..maxRL)) OF
                                        PrimaryCPICH-Info
RL-RemovalInformationList ::=
                                    SEQUENCE (SIZE (1..maxRL)) OF
                                        PrimaryCPICH-Info
                                    ENUMERATED {
RPP ::=
                                        mode0, mode1 }
                                    ENUMERATED {
S-Field ::=
                                        e1bit, e2bits }
SCCPCH-ChannelisationCode ::=
                                    ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8, cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }
SCCPCH-ChannelisationCode-VHCR ::= ENUMERATED {
                                        cc32-1, cc32-2, cc32-3, cc32-4,
                                         cc32-5, cc32-6, cc32-7, cc32-8,
                                         cc32-9, cc32-10, cc32-11, cc32-12,
                                        cc32-13, cc32-14, cc32-15, cc32-16,
                                        cc32-17, cc32-18, cc32-19, cc32-20,
                                        cc32-21, cc32-22, cc32-23, cc32-24,
                                        cc32-25, cc32-26, cc32-27, cc32-28,
                                        cc32-29, cc32-30, cc32-31, cc32-32 }
SCCPCH-ChannelisationCodeList ::= SEQUENCE (SIZE (1..16)) OF
                                        SCCPCH-ChannelisationCode
SCCPCH-ChannelisationCodeList-VHCR ::= SEQUENCE (SIZE (1..32)) OF
                                        SCCPCH-ChannelisationCode-VHCR
```

```
SCCPCH-InfoForFACH ::=
                                    SEQUENCE {
                                       SecondaryCCPCH-Info,
    secondaryCCPCH-Info
    tfcs
                                        TFCS,
                                    CHOICE {
    modeSpecificInfo
       fdd
                                       SEQUENCE {
            fach-PCH-InformationList
                                               FACH-PCH-InformationList,
            sib-ReferenceListFACH
                                               SIB-ReferenceListFACH
       },
        tdd
                                       SEQUENCE {
           fach-PCH-InformationList
                                               FACH-PCH-InformationList
    }
}
SCCPCH-InfoForFACH-r4 ::=
                                       SEOUENCE {
                                       SecondaryCCPCH-Info-r4,
   secondaryCCPCH-Info
                                       TFCS.
    tfcs
    fach-PCH-InformationList
                                       FACH-PCH-InformationList,
   modeSpecificInfo
                                   CHOICE {
       fdd
                                       SEQUENCE {
            sib-ReferenceListFACH
                                         SIB-ReferenceListFACH
        tdd
                                        NULL
    }
}
SCCPCH-SystemInformation ::=
                                   SEQUENCE {
   secondaryCCPCH-Info
                                       SecondaryCCPCH-Info,
                                                                           OPTIONAL,
                                                                           OPTIONAL.
    fach-PCH-InformationList
                                        FACH-PCH-InformationList
    pich-Info
                                        PICH-Info
                                                                            OPTIONAL
{\tt SCCPCH-SystemInformation-LCR-r4-ext} \ ::= \ {\tt SEQUENCE} \ \big\{
    secondaryCCPCH-LCR-Extensions SecondaryCCPCH-Info-LCR-r4-ext,
    -- pich-Info in the SCCPCH-SystemInformation IE shall be absent,
    -- and instead the following used.
   pich-Info
                                    PICH-Info-LCR-r4
                                                                           OPTIONAL
}
SCCPCH-SystemInformation-HCR-VHCR-r7 ::= SEQUENCE {
                                      SecondaryCCPCH-Info-HCR-VHCR-r7,
    secondaryCCPCH-Info
    tfcs
                                       TFCS
                                                                            OPTIONAL.
    fach-PCH-InformationList
                                       FACH-PCH-InformationList
                                                                           OPTIONAL,
   pich-Info
                                       PICH-Info-HCR-VHCR-r7
                                                                           OPTIONAL
SCCPCH-SystemInformationList ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                       SCCPCH-SystemInformation
SCCPCH-SystemInformationList-HCR-VHCR-r7 ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                       SCCPCH-SystemInformation-HCR-VHCR-r7
-- SCCPCH-SystemInformationList-LCR-r4-ext includes elements additional to those in
-- SCCPCH-SystemInformationList for the 1.28Mcps TDD. The order of the IEs
-- indicates which SCCPCH-SystemInformation-LCR-r4-ext IE extends which
-- SCCPCH-SystemInformation IE.
SCCPCH-SystemInformationList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                               SCCPCH-SystemInformation-LCR-r4-ext
-- The SCCPCH-SystemInformation-MBMS-r6 is used for an S-CCPCH dedicated for MBMS purposes.
SCCPCH-SystemInformation-MBMS-r6 ::= SEQUENCE {
                                 SecondaryCCPCHInfo-MBMS-r6,
    secondaryCCPCHInfo-MBMS
    transportFormatCombinationSet
                                       TFCS,
    {\tt fachCarryingMCCH}
                                       SEQUENCE {
       mcch-transportFormatSet
                                           TransportFormatSet,
       mcch-ConfigurationInfo
                                           MBMS-MCCH-ConfigurationInfo-r6
                                       MBMS-FACHCarryingMTCH-List
                                                                     OPTIONAL,
    fachCarryingMTCH-List
    \operatorname{--} If schedulingInformation is provided
                               SEQUENCE {
    fachCarryingMSCH
       msch-transportFormatSet
                                           TransportFormatSet,
       -- dummy is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored.
       dummy
                                           MBMS-MSCH-ConfigurationInfo-r6
           OPTIONAL
}
```

```
-- The SCCPCH-SystemInformation-MBMS-r7 is used for an S-CCPCH dedicated for MBMS purposes.
SCCPCH-SystemInformation-MBMS-r7 ::= SEQUENCE {
    secondaryCCPCHInfo-MBMS
                                       SecondaryCCPCHInfo-MBMS-r7,
    transportFormatCombinationSet
                                       TFCS,
    fachCarryingMCCH
                                       SEQUENCE {
                                           TransportFormatSet,
       mcch-transportFormatSet
       mcch-ConfigurationInfo
                                           MBMS-MCCH-ConfigurationInfo-r6
    fachCarryingMTCH-List
                                       MBMS-FACHCarryingMTCH-List
                                                                           OPTIONAL,
    -- If schedulingInformation is provided
                                SEQUENCE {
    fachCarryingMSCH
       msch-transportFormatSet
                                           TransportFormatSet
           OPTIONAL
}
S-CPICH-PowerOffset-MIMO ::=
                                       INTEGER (-6..0)
ScramblingCodeChange ::=
                                   ENUMERATED {
                                       codeChange, noCodeChange }
                                   ENUMERATED {
ScramblingCodeType ::=
                                       shortSC,
                                       longSC }
SecondaryCCPCH-Info ::=
                                   SEQUENCE {
    modeSpecificInfo
                                   CHOICE {
        fdd
                                       SEQUENCE {
             - dummyl is not used in this version of the specification and should be ignored.
                                           PCPICH-UsageForChannelEst,
           -- dummy2 is not used in this version of the specification. It should not
            -- be sent and if received it should be ignored.
                                           SecondaryCPICH-Info
           dummy2
           secondaryScramblingCode
                                           SecondaryScramblingCode
                                                                           OPTIONAL,
           sttd-Indicator
                                           BOOLEAN.
           sf-AndCodeNumber
                                           SF256-AndCodeNumber,
           pilotSymbolExistence
                                           BOOLEAN,
           tfci-Existence
                                           BOOLEAN,
           positionFixedOrFlexible
                                           PositionFixedOrFlexible,
                                                                           DEFAULT 0
           timingOffset
                                           TimingOffset
        },
                                       SEQUENCE {
        tdd
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
           individualTimeslotInfo
                                           CommonTimeslotInfoSCCPCH,
                                           IndividualTimeslotInfo,
           channelisationCode
                                           SCCPCH-ChannelisationCodeList
    }
}
SecondaryCCPCH-Info-r4 ::=
                               SEQUENCE {
    modeSpecificInfo
                                   CHOICE {
                                       SEQUENCE {
       fdd
            secondaryScramblingCode
                                         SecondaryScramblingCode
                                                                          OPTIONAL,
           sttd-Indicator
                                           BOOLEAN,
           sf-AndCodeNumber
                                           SF256-AndCodeNumber,
           pilotSymbolExistence
                                           BOOLEAN.
           tfci-Existence
                                           BOOLEAN,
           positionFixedOrFlexible
                                           PositionFixedOrFlexible,
           timingOffset
                                           TimingOffset
                                                                           DEFAULT 0
        },
        tdd
                                       SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
           commonTimeslotInfo
                                          CommonTimeslotInfoSCCPCH,
           tddOption
                                           CHOICE {
                                               SEQUENCE {
                t.dd384
                   individualTimeslotInfo
                                                   IndividualTimeslotInfo
                tdd128
                                               SEQUENCE {
                    individualTimeslotInfo
                                                   IndividualTimeslotInfo-LCR-r4
           channelisationCode
                                         SCCPCH-ChannelisationCodeList
        }
    }
}
SecondaryCCPCH-Info-HCR-VHCR-r7 ::= SEQUENCE {
    modeSpecificInfo
                                   CHOICE {
```

```
t.dd384
                                        SEQUENCE {
            individualTimeslotInfo
                                            IndividualTimeslotInfo-r7,
            channelisationCode
                                            SCCPCH-ChannelisationCodeList
        tdd768
                                        SEQUENCE {
            individualTimeslotInfo
                                        IndividualTimeslotInfo-VHCR,
            channelisationCode
                                            SCCPCH-ChannelisationCodeList-VHCR
        }
    }
SecondaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
    individualTimeslotLCR-Ext
                                        IndividualTimeslotInfo-LCR-r4-ext
SecondaryCCPCHInfo-MBMS-r6 ::=
                                    SEQUENCE {
    modeSpecificInfo
                                    CHOICE {
        fdd
                                        SEQUENCE {
            secondaryScramblingCode
                                            SecondaryScramblingCode
                                                                            OPTIONAL,
            sttd-Indicator
                                            BOOLEAN,
                                            SF256-AndCodeNumber,
            sf-AndCodeNumber
            timingOffset
                                            TimingOffset
                                                                            DEFAULT 0
        tdd384
                                        SEQUENCE {
            commonTimeslotInfoMBMS
                                            CommonTimeslotInfoMBMS.
            downlinkTimeslotsCodes
                                            DownlinkTimeslotsCodes
        tdd128
                                        SEQUENCE {
            commonTimeslotInfoMBMS
                                           CommonTimeslotInfoMBMS,
            downlinkTimeslotsCodes
                                            DownlinkTimeslotsCodes-LCR-r4
    }
}
                                    SEQUENCE {
SecondaryCCPCHInfo-MBMS-r7 ::=
    modeSpecificInfo
                                    CHOICE {
                                       SEQUENCE {
            secondaryScramblingCode
                                            SecondaryScramblingCode
                                                                           OPTIONAL,
                                            BOOLEAN,
            sttd-Indicator
            sf-AndCodeNumber
                                            SF256-AndCodeNumber,
            timingOffset
                                            TimingOffset
                                                                            DEFAULT 0,
            modulation
                                            CHOICE {
                modOPSK
                                                NULL.
                mod16QAM
                                                INTEGER (-11..4)
              OPTIONAL
        tdd384
                                        SEQUENCE {
            commonTimeslotInfoMBMS
                                            CommonTimeslotInfoMBMS,
            downlinkTimeslotsCodes
                                            DownlinkTimeslotsCodes-r7,
           modulation
                                            ENUMERATED { modQPSK, mod16QAM }
        t.dd768
                                        SEQUENCE {
            commonTimeslotInfoMBMS
                                            CommonTimeslotInfoMBMS,
            downlinkTimeslotsCodes
                                            DownlinkTimeslotsCodes-VHCR,
            modulation
                                            ENUMERATED { modQPSK, mod16QAM }
        },
        tdd128
                                        SEQUENCE {
            commonTimeslotInfoMBMS
                                           CommonTimeslotInfoMBMS,
            downlinkTimeslotsCodes
                                            DownlinkTimeslotsCodes-LCR-r4,
            mbsfnSpecialTimeSlot
                                            TimeSlotLCR-ext
                                                                             OPTIONAL.
            modulation
                                            ENUMERATED { modQPSK, mod16QAM }
    }
}
SecondaryCCPCHInfoDiff-MBMS ::=
                                    SEQUENCE {
    secondaryScramblingCode
                                        SecondaryScramblingCode
                                                                        OPTIONAL,
    sttd-Indicator
                                        BOOLEAN,
                                        SF256-AndCodeNumber
                                                                        OPTIONAL,
    sf-AndCodeNumber
    timingOffset
                                        TimingOffset
                                                                        OPTIONAL
SecondaryCPICH-Info ::=
                                    SEOUENCE {
    secondaryDL-ScramblingCode
                                        {\tt SecondaryScramblingCode}
                                                                           OPTIONAL,
    {\tt channelisationCode}
                                        ChannelisationCode256
SecondaryScramblingCode ::=
                                   INTEGER (1..15)
```

```
ENUMERATED {
SecondInterleavingMode ::=
                                       frameRelated, timeslotRelated }
SF8Codes ::=
                                    ENUMERATED {
                                       cc8-1, cc8-2, cc8-3, cc8-4, cc8-5, cc8-6, cc8-7, cc8-8}
SF16Codes ::=
                                    ENUMERATED {
                                       cc16-1, cc16-2, cc16-3, cc16-4, cc16-5, cc16-6, cc16-7,
                                       cc16-8}
                                    ENUMERATED {
SF16Codes2 ::=
                                       cc16-1, cc16-2, cc16-3, cc16-4, cc16-5, cc16-6, cc16-7,
                                       cc16-8, cc16-9, cc16-10, cc16-11, cc16-12, cc16-13, cc16-14,
                                       cc16-15, cc16-16}
                                    ENUMERATED {
SF32Codes ::=
                                       cc32-1, cc32-2, cc32-3, cc32-4, cc32-5, cc32-6, cc32-7,
                                       cc32-8, cc32-9, cc32-10, cc32-11, cc32-12, cc32-13, cc32-14,
                                       cc32-15, cc32-16}
-- SF256-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF256-AndCodeNumber ::=
                                    CHOICE {
   sf4
                                       INTEGER (0..3),
   sf8
                                       INTEGER (0..7),
                                       INTEGER (0..15),
   sf16
   sf32
                                       INTEGER (0..31),
                                        INTEGER (0..63),
   sf64
                                       INTEGER (0..127),
   sf128
                                       INTEGER (0..255)
   sf256
}
-- SF512-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF512-AndCodeNumber ::=
                                    CHOICE {
                                       INTEGER (0..3),
   sf4
   sf8
                                        INTEGER (0..7),
   sf16
                                       INTEGER (0..15),
                                       INTEGER (0..31),
   sf32
                                       INTEGER (0..63),
   sf64
   sf128
                                       INTEGER (0..127),
                                        INTEGER (0..255),
   sf256
                                       INTEGER (0..511)
   sf512
}
-- SF512-AndPilot encodes both "Spreading factor" and "Number of bits for Pilot bits"
SF512-AndPilot ::=
                                    CHOICE {
                                       NULL.
   sfd4
   sfd8
                                       NULL.
   sfd16
                                       NULL,
   sfd32
                                       NULL,
   sfd64
                                       NULL.
                                       PilotBits128.
   sfd128
    sfd256
                                       PilotBits256,
   sfd512
                                       NULL
SF-PDSCH ::=
                                    ENUMERATED {
                                       sfp4, sfp8, sfp16, sfp32,
                                        sfp64, sfp128, sfp256 }
                                    ENUMERATED {
SF-PRACH ::=
                                       sfpr32, sfpr64, sfpr128, sfpr256 }
SFN-TimeInfo ::=
   activationTimeSFN
                                       INTEGER (0..4095),
   physChDuration
                                   DurationTimeInfo
-- actual scheduling value = 2^{(\text{signalled value }+1)} and is the periodicity of sending special burst frames
                                       INTEGER (0..7)
SpecialBurstScheduling ::=
SpreadingFactor ::=
                                    ENUMERATED {
                                       sf4, sf8, sf16, sf32,
                                       sf64, sf128, sf256 }
SRB-delay ::=
                                    INTEGER (0..7)
SSDT-CellIdentity ::=
                                   ENUMERATED {
                                       ssdt-id-a, ssdt-id-b, ssdt-id-c,
```

```
ssdt-id-d, ssdt-id-e, ssdt-id-f,
                                       ssdt-id-g, ssdt-id-h }
SSDT-Information ::=
                                   SEQUENCE {
    s-Field
                                       S-Field,
    codeWordSet
                                       CodeWordSet
}
SSDT-Information-r4 ::=
                                  SEQUENCE {
   s-Field
                                      S-Field,
   codeWordSet
                                       CodeWordSet,
   ssdt-UL-r4
                                       SSDT-UL
                                                                               OPTIONAL
SSDT-UL ::=
                                   ENUMERATED {
                                      ul, ul-AndDL }
                                   ENUMERATED { true }
STTDIndication ::=
SynchronisationParameters-r4 ::=
                                   SEQUENCE {
                                     BIT STRING {
   sync-UL-CodesBitmap
                                           code7(0),
                                           code6(1),
                                           code5(2),
                                           code4(3),
                                           code3(4),
                                           code2(5),
                                           code1(6),
                                           code0(7)
                                           } (SIZE (8)),
                                      FPACH-Info-r4,
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes
                                       INTEGER (0..62),
                                       SYNC-UL-Procedure-r4
                                                                              OPTIONAL
    sync-UL-Procedure
}
                                  BIT STRING {
Sync-UL-Codes-Bitmap ::=
                                      code7(0),
                                       code6(1),
                                       code5(2),
                                       code4(3),
                                       code3(4).
                                       code2(5),
                                       code1(6),
                                       code0(7)
                                   } (SIZE (8))
   C-UL-Procedure-r4 ::=
max-SYNC-UL-Transmissions
SYNC-UL-Procedure-r4 ::=
                                 SEQUENCE {
                                  ENUMERATED { tr1, tr2, tr4, tr8 }, INTEGER (0..3)
   powerRampStep
}
   sync-UL-Codes-Bitmap
SYNC-UL-Info-r4 ::=
                                      Sync-UL-Codes-Bitmap,
    -- Actual value prxUpPCHdes = IE value - 120
                                       INTEGER (0..62),
   prxUpPCHdes
                                       INTEGER (0..3),
   powerRampStep
   max-SYNC-UL-Transmissions
                                      ENUMERATED { tr1, tr2, tr4, tr8 } ,
                                       INTEGER (1..32)
}
SYNC-UL-InfoForE-RUCCH ::=
                                 SEQUENCE {
                                   INTEGER (0..62)
  prxUpPCHdes
                                                                                       OPTIONAL,
                                      INTEGER (0..3)
ENUMERATED { tr1, tr2, tr4, tr8 }
   powerRampStep
                                                                                       OPTIONAL,
   max-SYNC-UL-Transmissions
                                                                                       OPTIONAL,
    e-RUCCH-Sync-UL-Codes-Bitmap
                                      Sync-UL-Codes-Bitmap,
                                       INTEGER (1..32)
}
                                   ENUMERATED {
TDD-FPACH-CCode16-r4 ::=
                                       cc16-1, cc16-2, cc16-3, cc16-4,
                                       cc16-5, cc16-6, cc16-7, cc16-8,
                                       cc16-9, cc16-10, cc16-11, cc16-12,
                                       cc16-13, cc16-14, cc16-15, cc16-16 }
TDD-UL-Interference ::=
                                   INTEGER (-110..-52)
                                   ENUMERATED {
TDD-PICH-CCode ::=
```

```
cc16-1, cc16-2, cc16-3, cc16-4,
                                         cc16-5, cc16-6, cc16-7, cc16-8, cc16-9, cc16-10, cc16-11, cc16-12,
                                          cc16-13, cc16-14, cc16-15, cc16-16 }
TDD768-PICH-CCode ::=
                                     ENUMERATED {
                                         cc32-1, cc32-2, cc32-3, cc32-4, cc32-5, cc32-6, cc32-7, cc32-8,
                                         cc32-9, cc32-10, cc32-11, cc32-12,
                                         cc32-13, cc32-14, cc32-15, cc32-16,
                                         cc32-17, cc32-18, cc32-19, cc32-20,
                                         cc32-21, cc32-22, cc32-23, cc32-24,
                                         cc32-25, cc32-26, cc32-27, cc32-28,
                                         cc32-29, cc32-30, cc32-31, cc32-32 }
                                     SEQUENCE (SIZE (1..maxTS)) OF
TDD-MBSFNInformation ::=
                                         TDD-MBSFNTSlotInfo
TDD-MBSFNTSlotInfo ::=
                                     SEQUENCE {
   timeSlotNumber
                                         TimeslotNumber,
    cellParametersID
                                         CellParametersID
                                     ENUMERATED {
TDD-PRACH-CCode8 ::=
                                         cc8-1, cc8-2, cc8-3, cc8-4,
                                          cc8-5, cc8-6, cc8-7, cc8-8 }
                                     ENUMERATED {
TDD-PRACH-CCode16 ::=
                                         cc16-1, cc16-2, cc16-3, cc16-4,
                                          cc16-5, cc16-6, cc16-7, cc16-8,
                                          cc16-9, cc16-10, cc16-11, cc16-12,
                                         cc16-13, cc16-14, cc16-15, cc16-16 }
                                     ENUMERATED {
TDD-PRACH-CCode-LCR-r4 ::=
                                         cc4-1, cc4-2, cc4-3, cc4-4,
                                          cc8-1, cc8-2, cc8-3, cc8-4,
                                         cc8-5, cc8-6, cc8-7, cc8-8,
                                         cc16-1, cc16-2, cc16-3, cc16-4,
                                         cc16-5, cc16-6, cc16-7, cc16-8,
                                         cc16-9, cc16-10, cc16-11, cc16-12,
                                         cc16-13, cc16-14, cc16-15, cc16-16 }
TDD-PRACH-CCodeList ::=
                                     CHOICE {
                                         SEQUENCE (SIZE (1..8)) OF
                                            TDD-PRACH-CCode8,
-- Channelisation codes cc16-9, cc16-10, cc16-11, cc16-12, cc16-13, cc16-14,
-- cc16-15 and cc16-16 shall not be used
                                         SEOUENCE (SIZE (1..8)) OF
                                              TDD-PRACH-CCode16
}
                                         ENUMERATED {
TDD768-PRACH-CCode16 ::=
                                         cc16-1, cc16-2, cc16-3, cc16-4,
                                         cc16-5, cc16-6, cc16-7, cc16-8,
                                         cc16-9, cc16-10, cc16-11, cc16-12,
                                         cc16-13, cc16-14, cc16-15, cc16-16 }
TDD768-PRACH-CCode32 ::=
                                         ENUMERATED {
                                         cc32-1, cc32-2, cc32-3, cc32-4, cc32-5, cc32-6, cc32-7, cc32-8,
                                         cc32-9, cc32-10, cc32-11, cc32-12,
                                         cc32-13, cc32-14, cc32-15, cc32-16 }
TDD768-PRACH-CCodeList ::=
                                     CHOICE {
                                         SEQUENCE (SIZE (1..16)) OF
   sf32
                                             TDD768-PRACH-CCode32,
-- Channelisation codes cc32-17, cc32-18, cc32-19, cc32-20, cc32-21, cc32-22,
-- cc32-23, cc32-24, cc32-25, cc32-26, cc32-27, cc32-28, cc32-29, cc32-30, cc32-31
-- and cc32-32 shall not be used
    sf16
                                         SEQUENCE (SIZE (1..16)) OF
                                             TDD768-PRACH-CCode16
}
                                     ENUMERATED {
TFC-ControlDuration ::=
                                         tfc-cd1, tfc-cd2, tfc-cd4, tfc-cd8,
                                         tfc-cd16, tfc-cd24, tfc-cd32,
                                         tfc-cd48, tfc-cd64, tfc-cd128,
                                         tfc-cd192, tfc-cd256, tfc-cd512 }
```

```
TFCI-Coding ::=
                                    ENUMERATED {
                                        tfci-bits-4, tfci-bits-8,
                                        tfci-bits-16, tfci-bits-32 }
TGCFN ::=
                                    INTEGER (0..255)
-- In TGD, value 270 represents "undefined" in the tabular description.
                                    INTEGER (15..270)
TGL ::=
                                    INTEGER (1..14)
TGMP ::=
                                    ENUMERATED {
                                        tdd-Measurement, fdd-Measurement,
                                        gsm-CarrierRSSIMeasurement,
                                        gsm-initialBSICIdentification, gsmBSICReconfirmation,
                                        multi-carrier }
TGP-Sequence ::=
                                    SEQUENCE {
                                        TGPSI,
    tgpsi
    tgps-Status
                                        CHOICE {
                                            SEQUENCE {
       activate
                                                TGCFN
           tgcfn
       deactivate
                                            NULL
    tgps-ConfigurationParams
                                       TGPS-ConfigurationParams
                                                                           OPTIONAL
}
TGPS-Reconfiguration-CFN ::=
                                   INTEGER (0..255)
TGP-SequenceList ::=
                                    SEQUENCE (SIZE (1..maxTGPS)) OF
                                        TGP-Sequence
TGP-SequenceShort ::=
                                    SEQUENCE {
    tgpsi
                                        TGPSI,
    tgps-Status
                                        CHOICE {
                                            SEQUENCE {
       activate
           tgcfn
                                                TGCFN
       deactivate
                                            NULL
    }
}
TGPL ::=
                                    INTEGER (1..144)
-- TABULAR: In TGPRC, value 0 represents "infinity" in the tabular description.
TGPRC ::=
                                    INTEGER (0..511)
TGPS-ConfigurationParams ::=
                                    SEQUENCE {
                                        TGMP,
   tqmp
                                        TGPRC.
    tgprc
                                        TGSN,
    tgsn
    tgl1
                                        TGL,
                                                                            OPTIONAL,
    tgl2
                                        TGL
                                        TGD,
    tgd
                                        TGPL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it shall be ignored.
                                                                       OPTIONAL,
   dummy
                                    TGPL
                                        RPP,
                                        ITP,
    itp
    -- TABULAR: Compressed mode method is nested inside UL-DL-Mode
   ul-DL-Mode
                                        UL-DL-Mode,
   dl-FrameType
                                        DL-FrameType,
   deltaSIR1
                                        DeltaSIR,
   deltaSIRAfter1
                                        DeltaSIR,
   deltaSIR2
                                        DeltaSIR
                                                                             OPTIONAL,
   deltaSIRAfter2
                                        DeltaSIR
                                                                             OPTIONAL.
   nidentifyAbort
                                        NidentifyAbort
                                                                             OPTIONAL,
    treconfirmAbort
                                        TreconfirmAbort
                                                                             OPTIONAL
}
TGPSI ::=
                                    INTEGER (1..maxTGPS)
TGSN ::=
                                    INTEGER (0..14)
                                    SEQUENCE {
TimeInfo ::=
```

```
activationTime
                                       ActivationTime
                                                                             OPTIONAL,
                                                                             OPTIONAL
   durationTimeInfo
                                        DurationTimeInfo
}
TimeSlotLCR-ext ::=
                                    ENUMERATED {
                                       ts7, spare3, spare2, spare1 }
                                    SEQUENCE (SIZE (1..maxTS)) OF
TimeslotList ::=
                                        TimeslotNumber
TimeslotList-r4 ::=
                                    CHOICE {
-- the choice for 7.68 Mcps TDD is as for 3.84 Mcps TDD --
    tdd384
                                        SEQUENCE (SIZE (1..maxTS)) OF
                                            TimeslotNumber,
   tdd128
                                         SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                            TimeslotNumber-LCR-r4
-- If TimeslotNumber is included for a 1.28Mcps TDD description, it shall take values from 0..6
TimeslotNumber ::=
                                        INTEGER (0..14)
TimeslotNumber-LCR-r4 ::=
                                        INTEGER (0..6)
TimeslotNumber-PRACH-LCR-r4 ::= INTEGER (1..6)
                               INTEGER (0..6)
TimeslotSync2 ::=
DTX-DRX-TimingInfo-r7 ::=
                                    SEQUENCE {
                                        CHOICE {
    timing
       continue
                                            NULL
        newTiming
                                            NewTiming
}
-- Actual value TimingOffset = IE value * 256
TimingOffset ::=
                                   INTEGER (0..149)
\label{total_model} \mbox{TimingMaintainedSynchInd} ::= \qquad \qquad \mbox{ENUMERATED} \ \{ \ \mbox{false} \ \}
TPC-CombinationIndex ::=
                                   INTEGER (0..5)
TPC-CommandTargetRate ::=
                                    INTEGER (0..10)
-- Actual value TPC-StepSizeFDD = IE value + 1
TPC-StepSizeFDD ::=
                                   INTEGER (0..1)
                                   INTEGER (1..3)
TPC-StepSizeTDD ::=
TransportBlockSizeIndex ::=
                                   INTEGER (1..32)
-- Actual value TreconfirmAbort = IE value * 0.5 seconds
TreconfirmAbort ::= INTEGER (1..20)
TX-DiversityMode ::=
                                    ENUMERATED {
                                        noDiversity,
                                        sttd,
                                        closedLoopMode1,
        -- dummy is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored.
                                         dummy }
UARFCN ::=
                                INTEGER (0..16383)
                                    SEOUENCE {
UCSM-Info ::=
   {\tt minimumSpreadingFactor}
                                        MinimumSpreadingFactor,
                                        NF-Max,
   nf-Max
                                        ChannelReqParamsForUCSM
   channelReqParamsForUCSM
}
                                    ENUMERATED {
UE-DPCCH-Burst ::=
                                        sub-frames-1,
                                         sub-frames-2,
                                         sub-frames-5,
                                        spare1 }
                                    ENUMERATED {
UE-DRX-Cycle ::=
                                        sub-frames-4.
                                         sub-frames-5,
```

```
sub-frames-8,
                                         sub-frames-10,
                                         sub-frames-16,
                                         sub-frames-20,
                                         spare2,
                                         spare1 }
UE-DTX-Cycle1-10ms ::=
                                    ENUMERATED {
                                         sub-frames-1,
                                         sub-frames-5,
                                         sub-frames-10,
                                         sub-frames-20 }
                                     ENUMERATED {
UE-DTX-Cycle1-2ms ::=
                                        sub-frames-1,
                                         sub-frames-4,
                                         sub-frames-5,
                                         sub-frames-8,
                                         sub-frames-10,
                                         sub-frames-16,
                                         sub-frames-20,
                                         spare1 }
UE-DTX-Cycle2-10ms ::=
                                     ENUMERATED {
                                         sub-frames-5,
                                         sub-frames-10,
                                         sub-frames-20,
                                         sub-frames-40,
                                         sub-frames-80,
                                         sub-frames-160,
                                         spare2,
                                         spare1 }
                                     ENUMERATED {
UE-DTX-Cycle2-2ms ::=
                                         sub-frames-4,
                                         sub-frames-5,
                                        sub-frames-8,
                                         sub-frames-10,
                                         sub-frames-16,
                                         sub-frames-20,
                                         sub-frames-32,
                                         sub-frames-40,
                                         sub-frames-64,
                                         sub-frames-80,
                                         sub-frames-128,
                                         sub-frames-160,
                                         spare4,
                                         spare3,
                                         spare2,
                                         spare1 }
UE-DTX-Cycle2InactivityThreshold ::=
                                        ENUMERATED {
                                             e-dch-tti-1,
                                             e-dch-tti-4,
                                             e-dch-tti-8,
                                             e-dch-tti-16,
                                             e-dch-tti-32,
                                             e-dch-tti-64,
                                             e-dch-tti-128,
                                             e-dch-tti-256,
                                             spare8,
                                             spare7,
                                             spare6,
                                             spare5,
                                             spare4,
                                             spare3,
                                             spare2,
                                             spare1 }
UE-DTX-long-preamble-length ::=
                                        ENUMERATED {
                                             slots-4,
                                             slots-15 }
UE-DTX-DRX-Offset ::=
                                         INTEGER (0..159)
UE-GrantMonitoring-InactivityThreshold ::= ENUMERATED {
                                                 e-dch-tti-0,
                                                 e-dch-tti-1,
```

```
e-dch-tti-2,
                                                e-dch-tti-4,
                                                e-dch-tti-8,
                                                e-dch-tti-16,
                                                e-dch-tti-32,
                                                e-dch-tti-64,
                                                e-dch-tti-128,
                                                e-dch-tti-256,
                                                spare6,
                                                spare5,
                                                spare4,
                                                spare3,
                                                spare2,
                                                spare1 }
UL-16QAM-Config ::=
                      SEQUENCE {
    ul-16QAM-Settings
                                       UL-16QAM-Settings
                                                                           OPTIONAL,
    e-TFCI-TableIndex
                                       E-TFCI-TableIndex
                                                                           OPTIONAL.
                                       ENUMERATED { true }
   mac-es-e-resetIndicator
                                                                           OPTIONAL
}
                                   SEQUENCE {
UL-16QAM-Settings ::=
    beta-Ed-Gain-E-AGCH-Table-Selection INTEGER (0..1)
UL-CCTrCH ::=
                                   SEQUENCE {
   tfcs-ID
                                      TFCS-IdentityPlain
                                                                          DEFAULT 1,
   ul-TargetSIR
                                       UL-TargetSIR,
   timeInfo
                                       TimeInfo,
                                       CommonTimeslotInfo
    commonTimeslotInfo
                                                                            OPTIONAL.
    ul-CCTrCH-TimeslotsCodes
                                       UplinkTimeslotsCodes
                                                                            OPTIONAL
UL-CCTrCH-r4 ::=
                                   SEQUENCE {
                                                                           DEFAULT 1,
   tfcs-ID
                                      TFCS-IdentityPlain
    -- The IE ul-TargetSIR corresponds to PRX-DPCHdes for 1.28Mcps TDD
    -- Actual value PRX-DPCHdes = (value of IE "ul-TargetSIR" - 120)
                                       UL-TargetSIR,
   ul-TargetSIR
   timeInfo
                                       TimeInfo,
    commonTimeslotInfo
                                        CommonTimeslotInfo
                                                                            OPTIONAL.
    tddOption
                                        CHOICE {
                                          SEQUENCE {
       t.dd384
                                               UplinkTimeslotsCodes
           ul-CCTrCH-TimeslotsCodes
                                                                          OPTIONAL
       tdd128
                                           SEQUENCE {
           ul-CCTrCH-TimeslotsCodes
                                               UplinkTimeslotsCodes-LCR-r4 OPTIONAL
    }
}
UL-CCTrCH-r7 ::=
                                   SEQUENCE {
                                       TFCS-IdentityPlain
                                                                            DEFAULT 1.
   tfcs-ID
    -- The IE ul-TargetSIR corresponds to PRX-DPCHdes for 1.28Mcps TDD
    -- Actual value PRX-DPCHdes = (value of IE "ul-TargetSIR" - 120)
   ul-TargetSIR
                                       UL-TargetSIR,
    timeInfo
                                       TimeInfo,
    commonTimeslotInfo
                                        CommonTimeslotInfo
                                                                            OPTIONAL,
    tddOption
                                        CHOICE {
       tdd384
                                           SEQUENCE {
           ul-CCTrCH-TimeslotsCodes
                                               UplinkTimeslotsCodes
                                                                           OPTIONAL
        tdd768
                                           SEQUENCE {
          ul-CCTrCH-TimeslotsCodes
                                              UplinkTimeslotsCodes-VHCR OPTIONAL
                                           SEQUENCE {
        t.dd128
           ul-CCTrCH-TimeslotsCodes
                                               UplinkTimeslotsCodes-LCR-r7 OPTIONAL
    }
}
UL-CCTrCHList ::=
                                   SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                       UL-CCTrCH
UL-CCTrCHList-r4 ::=
                                   SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                       UL-CCTrCH-r4
                                   SEQUENCE (SIZE (1..maxCCTrCH)) OF
UL-CCTrCHList-r7 ::=
                                       UL-CCTrCH-r7
```

```
UL-CCTrCHListToRemove ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        TFCS-IdentityPlain
UL-CCTrChTPCList ::=
                                   SEQUENCE (SIZE (0..maxCCTrCH)) OF
                                           TFCS-Identity
UL-ChannelRequirement ::= CHOICE {
   ul-DPCH-Info
                                       UL-DPCH-Info,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received the UE behaviour is not specified.
                                        CPCH-SetInfo
}
UL-ChannelRequirement-r4 ::= CHOICE {
   ul-DPCH-Info
                                    UL-DPCH-Info-r4,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received the UE behaviour is not specified.
                                        CPCH-SetInfo
}
UL-ChannelRequirement-r5 ::= CHOICE {
                                       UL-DPCH-Info-r5,
   ul-DPCH-Info
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received the UE behaviour is not specified.
   dummv
                                        CPCH-SetInfo
}
-- Note: the reference to CPCH in the element name below is incorrect. The name is not
-- changed to keep it aligned with R99.
UL-ChannelRequirementWithCPCH-SetID ::= CHOICE {
                                        UL-DPCH-Info,
   ul-DPCH-Info
    -- dummy1 and dummy 2 are not used in this version of the specification, they should
    -- not be sent and if received the UE behaviour is not specified.
    dummv1
                                        CPCH-SetInfo,
    dummv2
                                        CPCH-SetID
}
-- Note: the reference to CPCH in the element name below is incorrect. The name is not
-- changed to keep it aligned with R99.
UL-ChannelRequirementWithCPCH-SetID-r4 ::= CHOICE {
                                        UL-DPCH-Info-r4,
   ul-DPCH-Info
    -- dummy1 and dummy2 are not used in this version of the specification, they
   -- should not be sent and if received the UE behaviour is not specified.
                                        CPCH-SetInfo,
   dummy2
                                        CPCH-SetID
}
-- Note: the reference to CPCH in the element name below is incorrect. The name is not
-- changed to keep it aligned with R99.
UL-ChannelRequirementWithCPCH-SetID-r5 ::= CHOICE {
                                        UL-DPCH-Info-r5,
   ul-DPCH-Info
    -- dummy1 and dummy2 are not used in this version of the specification, they should
    -- not be sent and if received the UE behaviour is not specified.
                                        CPCH-SetInfo,
   dummv1
                                        CPCH-Set ID
    dummy2
}
                                    ENUMERATED {
UL-CompressedModeMethod ::=
                                        sf-2
                                        higherLayerScheduling }
UL-DL-Mode ::=
                                    CHOICE {
                                        UL-CompressedModeMethod,
   117
    d٦
                                        DL-CompressedModeMethod,
    ul-and-dl
                                            SEQUENCE {
                                            UL-CompressedModeMethod,
       ul
                                            DL-CompressedModeMethod
       dl
    } }
UL-DPCCH-SlotFormat ::=
                                    ENUMERATED {
                                       slf0, slf1, slf2 }
                                    SEQUENCE {
UL-DPCH-Info ::=

      DPCH-Info ::=
      SEQUENCE \ UL-DPCH-PowerControlInfo
      OPTIONAL,

      ul-DPCH-PowerControlInfo
      CHOICE \ (

                                        SEQUENCE {
        fdd
            scramblingCodeType
                                                ScramblingCodeType,
```

```
scramblingCode
                                                UL-ScramblingCode,
            numberOfDPDCH
                                                NumberOfDPDCH
                                                                            DEFAULT 1,
                                                SpreadingFactor,
            spreadingFactor
                                                BOOLEAN,
            tfci-Existence
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits
                                               NumberOfFBI-Bits
                                                                            OPTIONAL,
            puncturingLimit
                                                PuncturingLimit
        },
        tdd
                                          SEQUENCE {
            ul-TimingAdvance
                                               UL-TimingAdvanceControl
                                                                            OPTIONAL,
            ul-CCTrCHList
                                                UL-CCTrCHList
                                                                            OPTIONAL,
            ul-CCTrCHListToRemove
                                                UL-CCTrCHListToRemove
                                                                            OPTIONAL
        }
    }
}
UL-DPCH-Info-r4 ::=
                                   SEQUENCE {
                                       UL-DPCH-PowerControlInfo-r4
    ul-DPCH-PowerControlInfo
                                                                            OPTIONAL,
                                        CHOICE {
    modeSpecificInfo
        fdd
                                           SEQUENCE {
            scramblingCodeType
                                                ScramblingCodeType,
            scramblingCode
                                                UL-ScramblingCode,
            numberOfDPDCH
                                                NumberOfDPDCH
                                                                            DEFAULT 1,
                                                SpreadingFactor,
            spreadingFactor
                                                BOOLEAN,
            tfci-Existence
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits
                                               NumberOfFBI-Bits
                                                                            OPTIONAL,
            puncturingLimit
                                                PuncturingLimit
        },
        tdd
                                           SEQUENCE {
            ul-TimingAdvance
                                              UL-TimingAdvanceControl-r4 OPTIONAL,
           ul-CCTrCHList
                                                UL-CCTrCHList-r4
                                                                            OPTIONAL,
           ul-CCTrCHListToRemove
                                               UL-CCTrCHListToRemove
                                                                           OPTIONAL
        }
    }
}
                                   SEQUENCE {
UL-DPCH-Info-r5 ::=
    ul-DPCH-PowerControlInfo
                                       UL-DPCH-PowerControlInfo-r5
                                                                            OPTIONAL,
    modeSpecificInfo
                                        CHOICE {
                                           SEQUENCE {
        fdd
                                                ScramblingCodeType,
            scramblingCodeType
            scramblingCode
                                                UL-ScramblingCode,
                                                NumberOfDPDCH
            numberOfDPDCH
                                                                            DEFAULT 1.
            spreadingFactor
                                                SpreadingFactor,
            tfci-Existence
                                                BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
                                               NumberOfFBI-Bits
                                                                           OPTIONAL,
            numberOfFBI-Bits
            puncturingLimit
                                                PuncturingLimit
                                          SEQUENCE {
            ul-TimingAdvance
                                               UL-TimingAdvanceControl-r4 OPTIONAL,
            ul-CCTrCHList
                                                UL-CCTrCHList-r4
                                                                           OPTIONAL.
            ul-CCTrCHListToRemove
                                                UL-CCTrCHListToRemove
                                                                          OPTIONAL
        }
    }
}
UL-DPCH-Info-r6 ::=
                                    SEQUENCE {
    ul-DPCH-PowerControlInfo
                                        UL-DPCH-PowerControlInfo-r6
                                                                           OPTIONAL.
                                        CHOICE {
    modeSpecificInfo
                                            SEQUENCE {
        fdd
            scramblingCodeType
                                                ScramblingCodeType,
            scramblingCode
                                                UL-ScramblingCode,
                                                CHOICE {
            dpdchPresence
                present
                                                    SEQUENCE {
                   numberOfDPDCH
                                                        NumberOfDPDCH
                                                                                    DEFAULT 1,
                    spreadingFactor
                                                        SpreadingFactor,
                    tfci-Existence
                                                        BOOLEAN,
                    -- numberOfFBI-Bits is conditional based on history
                   numberOfFBI-Bits
                                                        NumberOfFBI-Bits
                                                                                    OPTIONAL,
                   puncturingLimit
                                                        PuncturingLimit
                                                    SEQUENCE {
                notPresent
                   tfci-Existence
                                                        BOOLEAN,
                    -- numberOfFBI-Bits is conditional based on history
                    numberOfFBI-Bits
                                                        NumberOfFBI-Bits
                                                                                    OPTIONAL
                }
```

```
}
       tdd
                                         SEQUENCE {
                                             UL-TimingAdvanceControl-r4 OPTIONAL,
           ul-TimingAdvance
           ul-CCTrCHList
                                               UL-CCTrCHList-r4
                                                                          OPTIONAL.
           ul-CCTrCHListToRemove
                                              UL-CCTrCHListToRemove
                                                                          OPTIONAL
   }
}
                                   SEQUENCE {
UL-DPCH-Info-r7 ::=
   ul-DPCH-PowerControlInfo
                                       UL-DPCH-PowerControlInfo-r7
                                                                   OPTIONAL,
                                       CHOICE {
   modeSpecificInfo
       fdd
                                           SEQUENCE {
           scramblingCodeType
                                               ScramblingCodeType,
           scramblingCode
                                               UL-ScramblingCode,
                                               CHOICE {
           dpdchPresence
                                                   SEQUENCE {
               present
                   numberOfDPDCH
                                                      NumberOfDPDCH
                                                                                  DEFAULT 1,
                   spreadingFactor
                                                       SpreadingFactor,
                   tfci-Existence
                                                       BOOLEAN,
                   -- numberOfFBI-Bits is conditional based on history
                   numberOfFBI-Bits
                                                       NumberOfFBI-Bits
                                                                                  OPTIONAL,
                   numberOfTPC-Bits
                                                      NumberOfTPC-Bits
                                                                                  OPTIONAL,
                   puncturingLimit
                                                      PuncturingLimit
                      },
               notPresent
                                                 SEQUENCE {
                                                      BOOLEAN,
                   tfci-Existence
                   -- numberOfFBI-Bits is conditional based on history
                                                      NumberOfFBI-Bits
                   numberOfFBI-Bits
                                                                                  OPTIONAL.
                   numberOfTPC-Bits
                                                      NumberOfTPC-Bits
                                                                                  OPTIONAL
           }
       },
       tdd
                                           SEQUENCE {
           ul-TimingAdvance
                                           UL-TimingAdvanceControl-r7 OPTIONAL,
           ul-CCTrCHList
                                               UL-CCTrCHList-r7 OPTIONAL,
           ul-CCTrCHListToRemove
                                              UL-CCTrCHListToRemove
                                                                         OPTIONAL
}
   ul-DPCH-PowerControlInfo
scramblingCodeType
reducedScramblingCodeType
UL-DPCH-InfoPostFDD ::=
           {\tt reducedScramblingCodeNumber}
                                               ReducedScramblingCodeNumber,
                                               SpreadingFactor
           spreadingFactor
UL-DPCH-InfoPostTDD ::=
                                   SEQUENCE {
   ul-DPCH-PowerControlInfo
                                   UL-DPCH-PowerControlInfoPostTDD,
   ul-TimingAdvance
                                       UL-TimingAdvanceControl
                                                                              OPTIONAL,
   ul-CCTrCH-TimeslotsCodes
                                      UplinkTimeslotsCodes
}
UL-DPCH-InfoPostTDD-LCR-r4 ::=
                                   SEQUENCE {
                                   UL-DPCH-PowerControlInfoPostTDD-LCR-r4,
   ul-DPCH-PowerControlInfo
                                       UL-TimingAdvanceControl-LCR-r4
   ul-TimingAdvance
                                                                                  OPTIONAL,
   ul-CCTrCH-TimeslotsCodes
                                     UplinkTimeslotsCodes-LCR-r4
UL-DPCH-InfoPredef ::=
                                  SEQUENCE {
   ul-DPCH-PowerControlInfo
                                      UL-DPCH-PowerControlInfoPredef,
   modeSpecificInfo
                                       CHOICE {
       fdd
                                           SEQUENCE {
           tfci-Existence
                                               BOOLEAN,
           puncturingLimit
                                               PuncturingLimit
       },
       tdd
                                           SEQUENCE {
           commonTimeslotInfo
                                              CommonTimeslotInfo
   }
}
UL-DPCH-InfoPredef-v770ext ::=
                                   SEQUENCE {
   modeSpecificInfo
                                       CHOICE {
                                           SEQUENCE {
       fdd
```

```
numberOfTPC-Bits
                                              NumberOfTPC-Bits
                                                                               OPTIONAL
                                           NULL }
       tdd
}
UL-DPCH-PowerControlInfo ::=
                                 CHOICE {
                                       SEQUENCE {
                                           DPCCH-PowerOffset,
       dpcch-PowerOffset
       pc-Preamble
                                           PC-Preamble,
        sRB-delay
                                           SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm
                                          PowerControlAlgorithm
    tdd
                                       SEQUENCE {
       ul-TargetSIR
                                        UL-TargetSIR
                                                                       OPTIONAL,
       ul-OL-PC-Signalling
                                           CHOICE {
           broadcast-UL-OL-PC-info NULL, individually signalled SEQUE
           individuallySignalled
                                               SEQUENCE {
               individualTS-InterferenceList IndividualTS-InterferenceList, dpch-ConstantValue ConstantValueTdd, primaryCCPCH-TX-Power
               primaryCCPCH-TX-Power
           }
        }
                                                                      OPTIONAL
    }
}
UL-DPCH-PowerControlInfo-r4 ::=
                                  CHOICE {
                                      SEQUENCE {
       dpcch-PowerOffset
                                          DPCCH-PowerOffset,
       pc-Preamble
                                           PC-Preamble,
       sRB-delay
                                           SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
       powerControlAlgorithm
                                         PowerControlAlgorithm
                                      SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-DPCHdes for 1.28Mcps TDD
        -- Actual value PRX-DPCHdes = (value of IE "ul-TargetSIR" - 120)
                             UL-TargetSIR
        ul-TargetSIR
                                                                       OPTIONAL.
        ul-OL-PC-Signalling
                                           CHOICE {
           broadcast-UL-OL-PC-info
           individuallySignalled
                                               SEQUENCE {
                                                  CHOICE {
               tddOption
                    tdd384
                                                     SEQUENCE {
                       individualTS-InterferenceList
                                                       IndividualTS-InterferenceList,
                       dpch-ConstantValue
                                                          ConstantValue
                    tdd128
                                                       SEQUENCE {
                       tpc-StepSize
                                                          TPC-StepSizeTDD
               primaryCCPCH-TX-Power
                                                  PrimaryCCPCH-TX-Power
           }
       }
    }
}
UL-DPCH-PowerControlInfo-r5 ::= CHOICE {
                                      SEQUENCE {
       dpcch-PowerOffset
                                           DPCCH-PowerOffset,
       pc-Preamble
                                           PC-Preamble,
        sRB-delav
                                           SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
       powerControlAlgorithm PowerControlAlgorithm,
        deltaACK
                                           DeltaACK OPTIONAL,
        deltaNACK
                                           DeltaNACK OPTIONAL,
        ack-NACK-repetition-factor
                                           ACK-NACK-repetitionFactor OPTIONAL
                                      SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-DPCHdes for 1.28Mcps TDD
        -- Actual value PRX-DPCHdes = (value of IE "ul-TargetSIR" - 120)
        ul-TargetSIR
                                          UL-TargetSIR
        ul-OL-PC-Signalling
                                           CHOICE {
           broadcast-UL-OL-PC-info
                                               NULL.
           individuallySignalled
                                               SEQUENCE {
                                               CHOICÈ {
               tddOption
                                                     SEQUENCE {
                    tdd384
                       individualTS-InterferenceList
                                                       IndividualTS-InterferenceList,
                       dpch-ConstantValue
                                                           ConstantValue
```

```
tdd128
                                                        SEOUENCE {
                                                            TPC-StepSizeTDD
                        tpc-StepSize
                primaryCCPCH-TX-Power
                                                  PrimaryCCPCH-TX-Power
       }
   }
}
UL-DPCH-PowerControlInfo-r6 ::=
                                CHOICE {
                                        SEQUENCE {
        dpcch-PowerOffset
                                           DPCCH-PowerOffset,
        pc-Preamble
                                            PC-Preamble,
        sRB-delay
                                            SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        {\tt powerControlAlgorithm} \qquad \qquad {\tt PowerControlAlgorithm},
                                                       OPTIONAL,
        deltaACK
                                            DeltaACK
                                           DeltaNACK OPTIONAL,
        deltaNACK
        ack-NACK-repetition-factor
                                           ACK-NACK-repetitionFactor OPTIONAL,
        harq-Preamble-Mode
                                           HARO-Preamble-Mode
                                       SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-DPCHdes for 1.28Mcps TDD
        -- Actual value PRX-DPCHdes = (value of IE "ul-TargetSIR" - 120)
                                           UL-TargetSIR
                                                                        OPTIONAL,
        ul-TargetSIR
        ul-OL-PC-Signalling
                                            CHOICE {
           broadcast-UL-OL-PC-info
                                                NULL,
            individuallySignalled
                                                SEQUENCE {
                                                   CHOICE {
                tddOption
                    t.dd384
                                                       SEQUENCE {
                        individualTS-InterferenceList
                                                         IndividualTS-InterferenceList,
                        dpch-ConstantValue
                                                            ConstantValue
                    tdd128
                                                        SEQUENCE {
                        beaconPLEst
                                                            BEACON-PL-Est
                                                                               OPTIONAL,
                        tpc-StepSize
                                                            TPC-StepSizeTDD
               primaryCCPCH-TX-Power
                                                   PrimaryCCPCH-TX-Power
           }
       }
    }
}
\label{eq:ul-decomposition} \mbox{UL-DPCH-PowerControlInfo-r7} ::= \mbox{ CHOICE } \{
                                       SEQUENCE {
        dpcch-PowerOffset
                                            DPCCH-PowerOffset,
        pc-Preamble
                                            PC-Preamble,
        sRB-delay
                                           SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
                                PowerControlAlgorithm,
        powerControlAlgorithm
                                           DeltaACK OPTIONAL,
DeltaNACK OPTIONAL,
        deltaACK
                                           DeltaNACK
        deltaNACK
        ack-NACK-repetition-factor
                                          ACK-NACK-repetitionFactor OPTIONAL,
                                           HARQ-Preamble-Mode
       harq-Preamble-Mode
                                       SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-DPCHdes for 1.28Mcps TDD
        -- Actual value PRX-DPCHdes = (value of IE "ul-TargetSIR" - 120)
                                           UL-TargetSIR
                                                                        OPTIONAL,
        ul-TargetSIR
        ul-OL-PC-Signalling
                                            CHOICE {
           broadcast-UL-OL-PC-info
            individuallySignalled
                                                SEQUENCE {
                tddOption
                                                   CHOICE {
                    t.dd384
                                                        SEQUENCE {
                        individualTS-InterferenceList
                                                           IndividualTS-InterferenceList,
                        dpch-ConstantValue
                                                            ConstantValue
                                                        SEQUENCE {
                    t.dd768
                                                        IndividualTS-InterferenceList,
                        individualTS-InterferenceList
                        dpch-ConstantValue
                                                            ConstantValue
                    tdd128
                                                        SEQUENCE {
                                                           BEACON-PL-Est
                        beaconPLEst
                                                                              OPTIONAL,
                        tpc-StepSize
                                                            TPC-StepSizeTDD
```

```
primaryCCPCH-TX-Power
                                        PrimaryCCPCH-TX-Power
           }
       }
    }
}
UL-DPCH-PowerControlInfoPostFDD ::= SEQUENCE {
    -- DPCCH-PowerOffset2 has a smaller range to save bits
    dpcch-PowerOffset
                                       DPCCH-PowerOffset2,
   pc-Preamble
                                       PC-Preamble,
    sRB-delay
                                       SRB-delay
}
UL-DPCH-PowerControlInfoPostTDD ::= SEQUENCE {
                       UL-TargetSIR,
   ul-TargetSIR
   ul-TimeslotInterference
                                       TDD-UL-Interference
}
UL-DPCH-PowerControlInfoPostTDD-LCR-r4 ::= SEQUENCE {
   -- The IE ul-TargetSIR corresponds to PRX-DPCHdes for 1.28Mcps TDD
    -- Actual value PRX-DPCHdes = (value of IE "ul-TargetSIR" - 120)
    ul-TargetSIR
                                       UL-TargetSIR
}
UL-DPCH-PowerControlInfoPredef ::=
                                       CHOICE {
                                      SEQUENCE {
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
       powerControlAlgorithm
                                          PowerControlAlgorithm
    t.dd
                                       SEQUENCE {
        -- dpch-ConstantValue shall be ignored if in 1.28Mcps TDD mode.
       dpch-ConstantValue
                                           ConstantValueTdd
}
UL-EDCH-Information-ext ::=
                                   CHOICE {
                                     NULL,
   fdd
    tdd
                                       SEQUENCE {
       non-ScheduledTransGrantInfo
                                         Non-ScheduledTransGrantInfoTDD-ext OPTIONAL
}
UL-EDCH-Information-r6 ::=
   mac-es-e-resetIndicator
                                   SEQUENCE {
                                   ENUMERATED { true }
                                                                              OPTIONAL,
   e-DPCCH-Info
                                       E-DPCCH-Info
                                                                               OPTIONAL,
    e-DPDCH-Info
                                      E-DPDCH-Info
                                                                               OPTIONAL.
    schedulingTransmConfiguration
                                     E-DPDCH-SchedulingTransmConfiguration OPTIONAL
UL-EDCH-Information-r7 ::=
                                  SEQUENCE {
   EDCH-Information-r7 ::=
mac-es-e-resetIndicator
                                      ENUMERATED { true }
                                                                               OPTIONAL,
    modeSpecificInfo
                                       CHOICE {
                                           SEQUENCE {
       fdd
                                               E-DPCCH-Info-r7
           e-DPCCH-Info
                                                                              OPTIONAL,
           e-DPDCH-Info
                                               E-DPDCH-Info-r7
                                                                              OPTIONAL,
           schedulingTransmConfiguration
                                               E-DPDCH-SchedulingTransmConfiguration OPTIONAL,
                                           ב-בארטה-פיופטעב-
UL-16QAM-Settings
           ul-16QAM-Settings
                                           SEQUENCE {
        t dd
           e-RUCCH-Info
                                              E-RUCCH-Info
                                                                               OPTIONAL,
           e-PUCH-Info
                                               E-PUCH-Info
                                                                               OPTIONAL,
           non-ScheduledTransGrantInfo
                                               Non-ScheduledTransGrantInfoTDD OPTIONAL
    }
}
UL-Interference ::=
                                  INTEGER (-110..-70)
UL-ScramblingCode ::=
                                  INTEGER (0..16777215)
UL-SynchronisationParameters-r4 ::= SEQUENCE {
    stepSize
                                      INTEGER (1..8),
                                       INTEGER (1..8)
    frequency
-- Actual value UL-TargetSIR = (IE value * 0.5) - 11
```

```
UL-TargetSIR ::=
                                    INTEGER (0..62)
UL-TimingAdvance ::=
                                    INTEGER (0..63)
UL-TimingAdvanceControl ::=
                                    CHOICE {
    disabled
                                        NULL,
    enabled
                                         SEQUENCE {
                                                                             OPTIONAL.
        ul-TimingAdvance
                                            UL-TimingAdvance
        activationTime
                                             ActivationTime
                                                                             OPTIONAL
}
                                    CHOICE {
UL-TimingAdvanceControl-r4 ::=
                                         NULL,
    disabled
    enabled
                                         SEQUENCE {
        tddOption
                                            CHOICE {
            tdd384
                                                 SEQUENCE {
                ul-TimingAdvance
                                                     UL-TimingAdvance
                                                                                      OPTIONAL,
                activationTime
                                                     ActivationTime
                                                                                      OPTIONAL
            },
            tdd128
                                                 SEQUENCE {
                ul-SynchronisationParameters
                                                    UL-SynchronisationParameters-r4 OPTIONAL,
                synchronisationParameters
                                                     SynchronisationParameters-r4
                                                                                      OPTIONAL
            }
        }
    }
}
UL-TimingAdvanceControl-r7 ::=
                                    CHOICE {
    disabled
                                         NULL.
    enabled
                                         SEQUENCE {
        tddOption
                                             CHOICE {
                                                 SEQUENCE {
            tdd384
                ul-TimingAdvance
                                                     UL-TimingAdvance
                                                                                      OPTIONAL,
                ext-UL-TimingAdvance
                                                     EXT-UL-TimingAdvance
                                                                                      OPTIONAL,
                                                                                      OPTIONAL
                activationTime
                                                     ActivationTime
            },
            tdd768
                                                 SEQUENCE {
                                                     EXT-UL-TimingAdvance
                                                                                      OPTIONAL,
                ext-UL-TimingAdvance
                                                     ActivationTime
                activationTime
            }.
            tdd128
                                                 SEQUENCE {
                ul-SynchronisationParameters
                                                     UL-SynchronisationParameters-r4 OPTIONAL,
                synchronisationParameters
                                                     SynchronisationParameters-r4
                                                                                      OPTIONAL
            }
        }
    }
}
UL-TimingAdvanceControl-LCR-r4 ::= CHOICE {
    disabled
                                         NULT.
    enabled
                                         SEQUENCE {
        ul-SynchronisationParameters
                                             UL-SynchronisationParameters-r4 OPTIONAL,
        synchronisationParameters
                                             SynchronisationParameters-r4 OPTIONAL
}
UL-TS-ChannelisationCode ::=
                                    ENUMERATED {
                                         cc1-1, cc2-1, cc2-2,
                                         cc4-1, cc4-2, cc4-3, cc4-4,
                                         cc8-1, cc8-2, cc8-3, cc8-4,
                                         cc8-5, cc8-6, cc8-7, cc8-8,
                                         cc16-1, cc16-2, cc16-3, cc16-4,
                                         cc16-5, cc16-6, cc16-7, cc16-8,
                                         cc16-9, cc16-10, cc16-11, cc16-12,
                                         cc16-13, cc16-14, cc16-15, cc16-16 }
UL-TS-ChannelisationCodeList ::=
                                    SEQUENCE (SIZE (1..2)) OF
                                         UL-TS-ChannelisationCode
UL-TS-ChannelisationCodeList-r7 ::=
                                         SEQUENCE (SIZE (1..2)) OF
                                             SEQUENCE {
        ul-TS-Channelisation-Code
                                                 UL-TS-ChannelisationCode,
        plcch-info
                                                 PLCCH-Info
                                                                 OPTIONAL
}
UL-TS-ChannelisationCode-VHCR ::=
                                         ENUMERATED {
                                         cc1-1, cc2-1, cc2-2,
```

```
cc4-1, cc4-2, cc4-3, cc4-4,
                                        cc8-1, cc8-2, cc8-3, cc8-4,
                                        cc8-5, cc8-6, cc8-7, cc8-8,
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16,
                                        cc32-1, cc32-2, cc32-3, cc32-4,
                                        cc32-5, cc32-6, cc32-7, cc32-8,
                                        cc32-9, cc32-10, cc32-11, cc32-12,
                                        cc32-13, cc32-14, cc32-15, cc32-16,
                                        cc32-17, cc32-18, cc32-19, cc32-20,
                                        cc32-21, cc32-22, cc32-23, cc32-24,
                                        cc32-25, cc32-26, cc32-27, cc32-28,
                                        cc32-29, cc32-30, cc32-31, cc32-32 }
UL-TS-ChannelisationCodeList-VHCR ::= SEQUENCE (SIZE (1..2)) OF
                                            UL-TS-ChannelisationCode-VHCR
Uplink-DPCCH-Slot-Format-Information ::=
                                            ENUMERATED {
                                                slot-format-1,
                                                -- dummy is not used in this version of
                                                -- specification, it should not be sent and if
                                                 -- received it should be ignored.
                                                dummy,
                                                slot-format-4,
                                                spare1 }
UplinkAdditionalTimeslots ::=
                                    SEQUENCE {
   parameters
                                        CHOICE {
                                            SEQUENCE {
       sameAsLast
          timeslotNumber
                                                TimeslotNumber
        },
       newParameters
                                            SEQUENCE {
           individualTimeslotInfo
                                                        IndividualTimeslotInfo,
            ul-TS-ChannelisationCodeList
                                                        UL-TS-ChannelisationCodeList
        }
    }
}
                                        SEQUENCE {
UplinkAdditionalTimeslots-LCR-r4 ::=
   parameters
                                        CHOICE {
                                            SEQUENCE {
       sameAsLast
           timeslotNumber
                                                TimeslotNumber
       newParameters
                                            SEQUENCE {
           individualTimeslotInfo
                                                        IndividualTimeslotInfo-LCR-r4,
            ul-TS-ChannelisationCodeList
                                                        UL-TS-ChannelisationCodeList
    }
}
UplinkAdditionalTimeslots-LCR-r7 ::=
                                        SEQUENCE {
   parameters
                                        CHOICE {
                                            SEQUENCE {
        sameAsLast
           timeslotNumber
                                                TimeslotNumber
            -- plcch-info assigned as previously defined slot
        },
        newParameters
                                            SEOUENCE {
           individualTimeslotInfo
                                                IndividualTimeslotInfo-LCR-r4,
            ul-TS-ChannelisationCodeList
                                               UL-TS-ChannelisationCodeList-r7
        }
    }
UplinkAdditionalTimeslots-VHCR ::= SEQUENCE {
   parameters
                                        CHOICE {
                                            SEQUENCE {
       sameAsLast
           timeslotNumber
                                                TimeslotNumber
        },
                                            SEQUENCE {
       newParameters
           individualTimeslotInfo
                                                IndividualTimeslotInfo-VHCR,
            ul-TS-ChannelisationCodeList
                                                UL-TS-ChannelisationCodeList
        }
    }
                                    SEQUENCE {
UplinkTimeslotsCodes ::=
```

```
dynamicSFusage
                                      BOOLEAN,
   firstIndividualTimeslotInfo
                                       IndividualTimeslotInfo,
   ul-TS-ChannelisationCodeList
                                      UL-TS-ChannelisationCodeList,
                                       CHOICE {
   moreTimeslots
       noMore
                                          NULL,
                                          CHOICE {
       additionalTimeslots
           consecutive
                                              SEQUENCE {
                                                  INTEGER (1..maxTS-1)
               numAdditionalTimeslots
           timeslotList
                                               SEQUENCE (SIZE (1..maxTS-1)) OF
                                                  UplinkAdditionalTimeslots
       }
   }
}
UplinkTimeslotsCodes-VHCR ::=
                                  SEQUENCE {
   dvnamicSFusage
                                       BOOLEAN.
   firstIndividualTimeslotInfo
                                       IndividualTimeslotInfo-VHCR,
   ul-TS-ChannelisationCodeList
                                       UL-TS-ChannelisationCodeList-VHCR,
   moreTimeslots
                                       CHOICE {
       noMore
                                          NULL.
       additionalTimeslots
                                           CHOICE {
                                               SEQUENCE {
           consecutive
                                                  INTEGER (1..maxTS-1)
               numAdditionalTimeslots
           timeslotList
                                              SEQUENCE (SIZE (1..maxTS-1)) OF
                                                  UplinkAdditionalTimeslots-VHCR
       }
   }
}
UplinkTimeslotsCodes-LCR-r4 ::=
                                   SEQUENCE {
   dynamicSFusage
                                       BOOLEAN,
   firstIndividualTimeslotInfo
                                       IndividualTimeslotInfo-LCR-r4.
   ul-TS-ChannelisationCodeList
                                       UL-TS-ChannelisationCodeList,
   moreTimeslots
                                       CHOICE {
                                          NULL,
       noMore
       additionalTimeslots
                                           CHOICE {
                                              SEOUENCE {
           consecutive
               numAdditionalTimeslots
                                                  INTEGER (1..maxTS-LCR-1)
           },
                                              SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
           timeslotList
                                                   UplinkAdditionalTimeslots-LCR-r4
   }
}
UplinkTimeslotsCodes-LCR-r7 ::=
                                  SEQUENCE {
   dynamicSFusage
                                       BOOLEAN,
   firstIndividualTimeslotInfo
                                       IndividualTimeslotInfo-LCR-r4,
   ul-TS-ChannelisationCodeList
                                       UL-TS-ChannelisationCodeList-r7,
   moreTimeslots
                                       CHOICE {
                                          NULL,
       noMore
                                           CHOICE {
       additionalTimeslots
           consecutive
                                               SEQUENCE {
            -- the choice of 'consecutive' is not needed because there is only 1 option.
               numAdditionalTimeslots
                                                 INTEGER (1..maxTS-LCR-1)
           timeslotList
                                               SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                                                   UplinkAdditionalTimeslots-LCR-r7
       }
   }
UpPCHposition-LCR ::=
                                  INTEGER (0..127)
Wi-LCR ::=
                                                                       INTEGER (1..4)
__ ******************
      MEASUREMENT INFORMATION ELEMENTS (10.3.7)
__ ******************
AcquisitionSatInfo ::=
                                   SEQUENCE {
                                       SatID,
    -- Actual value dopplerOthOrder = IE value * 2.5
   doppler0thOrder
                                       INTEGER (-2048..2047),
```

```
extraDopplerInfo
                                       ExtraDopplerInfo
                                                                           OPTIONAL,
                                        INTEGER (0..1022),
    codePhase
                                       INTEGER (0..19),
   integerCodePhase
                                       INTEGER (0..3),
   gps-BitNumber
    codePhaseSearchWindow
                                        CodePhaseSearchWindow,
    azimuthAndElevation
                                      AzimuthAndElevation
                                                                          OPTIONAL
}
AcquisitionSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
                                       AcquisitionSatInfo
                                    SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
AdditionalMeasurementID-List ::=
                                       MeasurementIdentity
AlmanacSatInfo ::=
                                    SEQUENCE {
                                       INTEGER (0..3),
    dataID
    satID
                                        SatID,
                                       BIT STRING (SIZE (16)),
    t-oa
                                       BIT STRING (SIZE (8)),
                                       BIT STRING (SIZE (16)),
   deltaI
   omegaDot
                                       BIT STRING (SIZE (16)),
    satHealth
                                       BIT STRING (SIZE (8)),
                                      BIT STRING (SIZE (24)),
   a-Sgrt
                                       BIT STRING (SIZE (24)),
   omega0
                                       BIT STRING (SIZE (24)),
   m0
   omega
                                       BIT STRING (SIZE (24)),
                                       BIT STRING (SIZE (11)),
   af0
                                       BIT STRING (SIZE (11))
   af1
}
AlmanacSatInfoList ::=
                                   SEQUENCE (SIZE (1..maxSat)) OF
                                       AlmanacSatInfo
ALM-keplerianParameters ::=
                                   SEQUENCE {
    t-oa
                                       INTEGER (0..147), -- time of week by 4096s steps
    iod-a
                                        INTEGER (0..3),
    sat-info-kpList
                                       GANSS-SAT-Info-Almanac-KpList
}
AverageRLC-BufferPayload ::=
                                    ENUMERATED {
                                        pla0, pla4, pla8, pla16, pla32,
                                        pla64, pla128, pla256, pla512,
                                        pla1024, pla2k, pla4k, pla8k, pla16k,
                                        pla32k, pla64k, pla128k, pla256k,
                                        pla512k, pla1024k, spare12, spare11, spare10, spare9, spare8, spare7, spare6,
                                        spare5, spare4, spare3, spare2, spare1 }
AzimuthAndElevation ::=
   -- Actual value azimuth = IE value * 11.25
                                        INTEGER (0..31),
   azimuth
    -- Actual value elevation = IE value * 11.25
    elevation
                                       INTEGER (0..7)
}
BadSatList ::=
                                    SEQUENCE (SIZE (1..maxSat)) OF
                                       INTEGER (0..63)
Frequency-Band ::=
                                    ENUMERATED {
                                        dcs1800BandUsed, pcs1900BandUsed }
BCCH-ARFCN ::=
                                    INTEGER (0..1023)
BLER-MeasurementResults ::=
                                    SEQUENCE {
    transportChannelIdentity
                                       TransportChannelIdentity,
    dl-TransportChannelBLER
                                       DL-TransportChannelBLER
                                                                          OPTIONAL
}
                                   SEQUENCE (SIZE (1..maxTrCH)) OF
BLER-MeasurementResultsList ::=
                                        BLER-MeasurementResults
BLER-TransChIdList ::=
                                    SEQUENCE (SIZE (1..maxTrCH)) OF
                                       TransportChannelIdentity
BSIC-VerificationRequired ::=
                                  ENUMERATED {
                                       required, notRequired }
```

```
BSICReported ::=
                                    CHOICE {
    -- Value maxCellMeas is not allowed for verifiedBSIC
    verifiedBSIC
                                        INTEGER (0..maxCellMeas),
   nonVerifiedBSIC
                                        BCCH-ARFCN
BurstModeParameters ::=
                                    SEQUENCE {
                                       INTEGER (0..15),
   burstStart
    burstLength
                                        INTEGER (10..25),
    burstFreq
                                        INTEGER (1..16)
}
CellDCH-ReportCriteria ::= CHOICE {
   intraFreqReportingCriteria IntraFreqReportingCriteria,
   periodicalReportingCriteria PeriodicalReportingCriteria
                                       PeriodicalReportingCriteria
}
   IntraFreqReportingCriteria IntraFreqReportingCriteria-LCR-r4, periodicalReportingCriteria PeriodicalReportingCriteria
CellDCH-ReportCriteria-LCR-r4 ::= CHOICE {
}
-- Actual value CellIndividualOffset = IE value * 0.5
CellIndividualOffset ::=
                                    INTEGER (-20..20)
CellInfo ::=
                                   SEQUENCE {
    cellIndividualOffset
                                        CellIndividualOffset
                                                                            DEFAULT 0,
                                        ReferenceTimeDifferenceToCell DEFAULT 0
    referenceTimeDifferenceToCell
    modeSpecificInfo
                                       CHOICE {
                                         SEQUENCE {
        fdd
                                                PrimaryCPICH-Info OPTIONAL,
PrimaryCPICH-TX-Power OPTIONAL,
           primaryCPICH-Info
                                              PrimaryCPICH-Info
            primaryCPICH-TX-Power
            readSFN-Indicator
                                               BOOLEAN.
            tx-DiversityIndicator
                                               BOOLEAN
                                           SEQUENCE {
           primaryCCPCH-Info
                                              PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power
                                                PrimaryCCPCH-TX-Power OPTIONAL,
            timeslotInfoList
                                               TimeslotInfoList
                                                                           OPTIONAL,
           readSFN-Indicator
                                                BOOLEAN
    }
}
    cellIndividualOffset
CellInfo-r4 ::=
                                    SEQUENCE {
                                    CellIndividualOffset
                                                                           DEFAULT 0.
                                        ReferenceTimeDifferenceToCell OPTIONAL,
    referenceTimeDifferenceToCell
    modeSpecificInfo
                                       CHOICE {
        fdd
                                         SEQUENCE {
                                                PrimaryCPICH-Info
           primaryCPICH-Info
                                                                           OPTIONAL.
                                                PrimaryCPICH-TX-Power
            primaryCPICH-TX-Power
                                                                            OPTIONAL,
            readSFN-Indicator
                                                BOOLEAN,
                                                BOOLEAN
            tx-DiversityIndicator
        },
        tdd
                                          SEQUENCE {
           primaryCCPCH-Info
                                            PrimaryCCPCH-Info-r4,
            primaryCCPCH-TX-Power
                                               PrimaryCCPCH-TX-Power
                                                                           OPTIONAL,
            timeslotInfoList
                                               TimeslotInfoList-r4
                                                                           OPTIONAL,
           readSFN-Indicator
                                               BOOLEAN
    }
}
    cellIndividualOffset
CellInfoSI-RSCP ::=
                                    SEQUENCE {
                                       CellIndividualOffset
                                                                            DEFAULT 0,
    referenceTimeDifferenceToCell
                                        ReferenceTimeDifferenceToCell
                                                                            OPTIONAL,
                                       CHOICE {
    modeSpecificInfo
                                            SEQUENCE {
        fdd
                                                                          OPTIONAL,
           primaryCPICH-Info
                                               PrimaryCPICH-Info
                                                PrimaryCPICH-TX-Power
            primaryCPICH-TX-Power
                                                                            OPTIONAL,
            readSFN-Indicator
                                                BOOLEAN,
            tx-DiversityIndicator
                                               BOOLEAN
        t.dd
                                          SEQUENCE {
            primaryCCPCH-Info
                                                PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power
                                                PrimaryCCPCH-TX-Power
                                                                           OPTIONAL,
```

```
timeslotInfoList
                                              TimeslotInfoList
                                                                        OPTIONAL,
           readSFN-Indicator
                                              BOOLEAN
    cellSelectionReselectionInfo
                                     CellSelectReselectInfoSIB-11-12-RSCP
                                                                                 OPTIONAL
}
CellInfoSI-RSCP-LCR-r4 ::=
                                 SEQUENCE {
   cellIndividualOffset
                                      CellIndividualOffset
                                                                         DEFAULT 0,
   \tt referenceTimeDifferenceToCell
                                       ReferenceTimeDifferenceToCell
                                                                         OPTIONAL,
                                      PrimaryCCPCH-Info-LCR-r4,
   primaryCCPCH-Info
   primaryCCPCH-TX-Power
                                      PrimaryCCPCH-TX-Power
                                                                         OPTIONAL.
   timeslotInfoList
                                                                         OPTIONAL,
                                      TimeslotInfoList-LCR-r4
   readSFN-Indicator
                                      BOOLEAN,
   cellSelectionReselectionInfo
                                      CellSelectReselectInfoSIB-11-12-RSCP
                                                                                 OPTIONAL
}
CellInfoSI-ECN0 ::=
   cellIndividualOffset
                                   SEQUENCE {
                                      CellIndividualOffset
                                                                         DEFAULT 0.
   referenceTimeDifferenceToCell
                                       ReferenceTimeDifferenceToCell
                                                                         OPTIONAL,
   modeSpecificInfo
                                      CHOICE {
       fdd
                                          SEQUENCE {
           primaryCPICH-Info
                                              PrimaryCPICH-Info
                                                                          OPTIONAL,
                                              PrimaryCPICH-TX-Power
           primaryCPICH-TX-Power
                                                                         OPTIONAL,
           readSFN-Indicator
                                              BOOLEAN,
                                              BOOLEAN
           tx-DiversityIndicator
       },
       t.dd
                                          SEQUENCE {
           primaryCCPCH-Info
                                              PrimaryCCPCH-Info,
           primaryCCPCH-TX-Power
                                                                         OPTIONAL.
                                              PrimaryCCPCH-TX-Power
           timeslotInfoList
                                              TimeslotInfoList
                                                                          OPTIONAL,
           readSFN-Indicator
                                              BOOLEAN
    cellSelectionReselectionInfo
                                    CellSelectReselectInfoSIB-11-12-ECN0
                                                                             OPTIONAL
}
CellInfoSI-ECN0-LCR-r4 ::=
                                  SEQUENCE {
   cellIndividualOffset
                                      CellIndividualOffset
                                                                         DEFAULT 0,
   \tt referenceTimeDifferenceToCell
                                       ReferenceTimeDifferenceToCell
                                                                        OPTIONAL,
                                      PrimaryCCPCH-Info-LCR-r4,
   primaryCCPCH-Info
   primaryCCPCH-TX-Power
                                      PrimaryCCPCH-TX-Power
                                                                         OPTIONAL.
   timeslotInfoList
                                      TimeslotInfoList-LCR-r4
                                                                         OPTIONAL,
   readSFN-Indicator
                                      BOOLEAN,
   cellSelectionReselectionInfo
                                    CellSelectReselectInfoSIB-11-12-ECN0
}
CellInfoSI-HCS-RSCP ::=
                                   SEQUENCE {
   cellIndividualOffset
                                      CellIndividualOffset
                                                                          DEFAULT 0,
                                       ReferenceTimeDifferenceToCell OPTIONAL,
   referenceTimeDifferenceToCell
   modeSpecificInfo
                                      CHOICE {
       fdd
                                          SEOUENCE {
           primaryCPICH-Info
                                             PrimaryCPICH-Info
                                                                        OPTIONAL,
           primaryCPICH-TX-Power
                                              PrimaryCPICH-TX-Power
                                                                         OPTIONAL,
           readSFN-Indicator
                                              BOOLEAN,
                                              BOOLEAN
           tx-DiversityIndicator
       },
       tdd
                                          SEQUENCE {
           primaryCCPCH-Info
                                              PrimaryCCPCH-Info,
           primaryCCPCH-TX-Power
                                              PrimaryCCPCH-TX-Power
                                                                          OPTIONAL.
           timeslotInfoList
                                              TimeslotInfoList
                                                                          OPTIONAL,
           readSFN-Indicator
                                              BOOLEAN
       }
    cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12-HCS-RSCP
                                                                               OPTIONAL
}
CellInfoSI-HCS-RSCP-LCR-r4 ::=
                                  SEQUENCE {
                                       CellIndividualOffset
                                                                         DEFAULT 0,
   cellIndividualOffset
   referenceTimeDifferenceToCell
                                       ReferenceTimeDifferenceToCell
                                                                         OPTIONAL,
                                      PrimaryCCPCH-Info-LCR-r4,
   primaryCCPCH-Info
   primaryCCPCH-TX-Power
                                      PrimaryCCPCH-TX-Power
                                                                          OPTIONAL,
                                      TimeslotInfoList-LCR-r4
   timeslotInfoList
                                                                          OPTIONAL,
   readSFN-Indicator
                                      BOOLEAN,
   cellSelectionReselectionInfo
                                      CellSelectReselectInfoSIB-11-12-HCS-RSCP
}
CellInfoSI-HCS-ECN0 ::=
                                  SEQUENCE {
```

```
cellIndividualOffset
                                      CellIndividualOffset
                                                                           DEFAULT 0,
    referenceTimeDifferenceToCell
                                      ReferenceTimeDifferenceToCell
                                                                          OPTIONAL,
    modeSpecificInfo
                                       CHOICE {
        fdd
                                           SEQUENCE {
           primaryCPICH-Info
                                              PrimaryCPICH-Info
                                                                          OPTIONAL,
           primaryCPICH-TX-Power
                                               PrimaryCPICH-TX-Power
                                                                          OPTIONAL,
           readSFN-Indicator
                                               BOOLEAN,
                                               BOOLEAN
           tx-DiversityIndicator
                                           SEQUENCE {
           primaryCCPCH-Info
                                              PrimaryCCPCH-Info,
           primaryCCPCH-TX-Power
                                               PrimaryCCPCH-TX-Power
                                                                          OPTIONAL.
                                               TimeslotInfoList
           timeslotInfoList
                                                                          OPTIONAL.
           readSFN-Indicator
                                               BOOLEAN
    }.
    cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12-HCS-ECN0
                                                                                OPTIONAL
}
{\tt CellInfoSI-HCS-ECN0-LCR-r4} \ ::= \ \ {\tt SEQUENCE} \ \big\{
                                   CellIndividualOffset
    cellIndividualOffset
                                                                          DEFAULT 0,
    {\tt referenceTimeDifferenceToCell}
                                      ReferenceTimeDifferenceToCell
                                                                          OPTIONAL,
                                       PrimaryCCPCH-Info-LCR-r4,
   primaryCCPCH-TX-Power
    primaryCCPCH-Info
                                      PrimaryCCPCH-TX-Power
    timeslotInfoList
                                       TimeslotInfoList-LCR-r4
                                                                          OPTIONAL.
    readSFN-Indicator
                                      BOOLEAN,
    cellSelectionReselectionInfo
                                     CellSelectReselectInfoSIB-11-12-HCS-ECN0
}
CellMeasuredResults ::=
                                 SEQUENCE {
    cellIdentity
                                      CellIdentity
                                                                           OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
                 SFN-SFN-ObsTimeDifference
                                                OPTIONAL,
    cellSynchronisationInfo CellSynchronisationInfo
                                                                  OPTIONAL,
    modeSpecificInfo
                                      CHOICE {
                                           SEQUENCE {
           primaryCPICH-Info
                                               PrimaryCPICH-Info,
           cpich-Ec-N0
                                               CPICH-Ec-NO
                                                                          OPTIONAL,
           cpich-RSCP
                                               CPICH-RSCP
                                                                          OPTIONAL,
           pathloss
                                               Pathloss
                                                                          OPTIONAL
        },
                                           SEQUENCE {
        t.dd
           cellParametersID
                                               CellParametersID,
           proposedTGSN
                                               TGSN
                                                                          OPTIONAL,
           primaryCCPCH-RSCP
                                               PrimaryCCPCH-RSCP
                                                                          OPTIONAL,
           pathloss
                                                                          OPTIONAL.
                                               Pathloss
           timeslotISCP-List
                                               TimeslotISCP-List
                                                                          OPTIONAL
    }
}
CellMeasurementEventResults ::=
                                   CHOICE {
                                       SEQUENCE (SIZE (1..maxCellMeas)) OF
                                          PrimaryCPICH-Info,
    t.dd
                                       SEQUENCE (SIZE (1..maxCellMeas)) OF
                                           PrimaryCCPCH-Info
}
CellMeasurementEventResults-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                           PrimaryCCPCH-Info-LCR-r4
CellReportingQuantities ::=
                                  SEQUENCE {
    -- dummy is not used in this version of the specification -- and if received it should be ignored.
                           SFN-SFN-OTD-Type,
    cellIdentity-reportingIndicator
                                                       BOOLEAN,
    cellSynchronisationInfoReportingIndicator
                                                       BOOLEAN,
                                      CHOICE {
    modeSpecificInfo
        fdd
                                           SEQUENCE {
           cpich-Ec-N0-reportingIndicator
                                                                   BOOLEAN,
           cpich-RSCP-reportingIndicator
                                                                   BOOLEAN,
           pathloss-reportingIndicator
                                                               BOOLEAN
                                           SEQUENCE {
           timeslotISCP-reportingIndicator
                                                               BOOLEAN.
           proposedTGSN-ReportingRequired
                                                               BOOLEAN,
           primaryCCPCH-RSCP-reportingIndicator
                                                                   BOOLEAN,
```

```
pathloss-reportingIndicator
                                                              BOOLEAN
    }
}
CellSelectReselectInfoSIB-11-12 ::= SEQUENCE {
    q-Offset1S-N
                                       O-OffsetS-N
                                                                          DEFAULT 0,
    q-Offset2S-N
                                       Q-OffsetS-N
                                                                          OPTIONAL,
    maxAllowedUL-TX-Power
                                       MaxAllowedUL-TX-Power
                                                                          OPTIONAL,
    hcs-NeighbouringCellInformation-RSCP
                                           HCS-NeighbouringCellInformation-RSCP
    modeSpecificInfo
                                       CHOICE {
                                           SEQUENCE {
        fdd
           q-QualMin
                                               Q-QualMin
                                                                          OPTIONAL.
           q-RxlevMin
                                               Q-RxlevMin
                                                                          OPTIONAL
        },
        tdd
                                           SEQUENCE {
           q-RxlevMin
                                               Q-RxlevMin
                                                                          OPTIONAL
        },
                                           SEQUENCE {
       gsm
          q-RxlevMin
                                              Q-RxlevMin
                                                                         OPTIONAL
}
CellSelectReselectInfoSIB-11-12-RSCP ::= SEQUENCE {
    q-OffsetS-N
                         Q-OffsetS-N
                                                                  DEFAULT 0.
    maxAllowedUL-TX-Power
                                       MaxAllowedUL-TX-Power
                                                                          OPTIONAL,
   modeSpecificInfo
                                       CHOICE {
       fdd
                                           SEOUENCE {
           q-QualMin
                                               Q-QualMin
                                                                          OPTIONAL.
           q-RxlevMin
                                               Q-RxlevMin
                                                                          OPTIONAL
        },
        t.dd
                                           SEQUENCE {
           q-RxlevMin
                                              Q-RxlevMin
                                                                          OPTIONAL
        },
       gsm
                                           SEQUENCE {
           q-RxlevMin
                                               Q-RxlevMin
                                                                         OPTIONAL
        }
}
CellSelectReselectInfoSIB-11-12-ECN0 ::=
                                         SEQUENCE {
    q-Offset1S-N
                                       O-OffsetS-N
                                                                      DEFAULT 0,
    q-Offset2S-N
                                       Q-OffsetS-N
                                                                      DEFAULT 0,
    maxAllowedUL-TX-Power
                                       MaxAllowedUL-TX-Power
                                                                         OPTIONAL,
    modeSpecificInfo
                                       CHOICE {
       fdd
                                           SEQUENCE {
           q-QualMin
                                              Q-QualMin
                                                                          OPTIONAL,
           q-RxlevMin
                                               Q-RxlevMin
        },
        tdd
                                           SEQUENCE {
           q-RxlevMin
                                              Q-RxlevMin
                                                                         OPTIONAL
        },
                                           SEQUENCE {
       gsm
           q-RxlevMin
                                               Q-RxlevMin
                                                                          OPTIONAL
}
CellSelectReselectInfoSIB-11-12-HCS-RSCP ::=
                                              SEQUENCE {
                         Q-OffsetS-N
    q-OffsetS-N
                                                                  DEFAULT 0,
    maxAllowedUL-TX-Power
                                      MaxAllowedUL-TX-Power
                                                                          OPTIONAL,
    hcs-NeighbouringCellInformation-RSCP
                                              HCS-NeighbouringCellInformation-RSCP
   OPTIONAL.
    modeSpecificInfo
                                       CHOICE {
       fdd
                                           SEQUENCE {
           q-QualMin
                                              Q-QualMin
                                                                          OPTIONAL,
                                               Q-RxlevMin
           q-RxlevMin
                                                                          OPTIONAL
       },
        tdd
                                           SEQUENCE {
                                              Q-RxlevMin
           q-RxlevMin
                                                                          OPTIONAL
        },
                                           SEQUENCE {
       gsm
           q-RxlevMin
                                                                         OPTIONAL
                                               Q-RxlevMin
    }
}
```

```
CellSelectReselectInfoSIB-11-12-HCS-ECNO ::= SEQUENCE {
    q-Offset1S-N
                                           Q-OffsetS-N
                                                                               DEFAULT 0,
    q-Offset2S-N
                                            O-OffsetS-N
                                                                               DEFAULT 0.
                                           MaxAllowedUL-TX-Power
    maxAllowedUL-TX-Power
                                                                                   OPTIONAL.
    hcs-NeighbouringCellInformation-ECN0
                                                HCS-NeighbouringCellInformation-ECN0
    OPTIONAL,
    modeSpecificInfo
                                           CHOICE {
        fdd
                                                SEQUENCE {
             q-QualMin
                                                     Q-QualMin
                                                                                    OPTIONAL,
             q-RxlevMin
                                                     Q-RxlevMin
                                                                                   OPTIONAL
        },
        tdd.
                                                SEOUENCE {
            q-RxlevMin
                                                    Q-RxlevMin
                                                                                   OPTIONAL
        },
                                                SEQUENCE {
        gsm
             q-RxlevMin
                                                    Q-RxlevMin
                                                                                  OPTIONAL
    }
}
CellSelectReselectInfo-v590ext ::= SEQUENCE {
    deltaQrxlevmin
                                       DeltaQrxlevmin
                                                                           OPTIONAL,
    deltaQhcs
                                      DeltaRSCP
                                                                           OPTIONAL
}
CellSelectReselectInfoPCHFACH-v5b0ext ::= SEQUENCE {
   q-Hyst-1-S-PCH Q-Hyst-S-Fine
q-Hyst-1-S-FACH Q-Hyst-S-Fine
                                                                           OPTIONAL,
                                                                          OPTIONAL,
                            Q-Hyst-S-Fine
Q-Hyst-S-Fine
T-Reselection-S
T-Reselection-S-Fine
    q-Hyst-2-S-PCH
q-Hyst-2-S-FACH
                                                                           OPTIONAL,
                                                                          OPTIONAL,
    t-Reselection-S-PCH
                                                                          OPTIONAL,
    t-Reselection-S-FACH
                                                                          OPTIONAL
}
CellSelectReselectInfoTreselectionScaling-v5c0ext ::= SEQUENCE {
    -- For speed detection, the same HCS parameters are utilised
    non-HCS-t-CR-Max T-CRMax
speedDependentScalingFactor SpeedDependentScalingFactor
interFrequencyTreselectionScalingFactor TreselectionScalingFactor
interRATTreselectionScalingFactor TreselectionScalingFactor
                                                                                                OPTIONAL,
                                                                                                OPTIONAL,
                                                                                                OPTIONAL,
                                                                                                 OPTIONAL
}
CellsForInterFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                       InterFreqCellID
CellsForInterRATMeasList ::=
                                            SEQUENCE (SIZE (1..maxCellMeas)) OF
                                           InterRATCellID
CellsForIntraFreqMeasList ::=
                                      SEQUENCE (SIZE (1..maxCellMeas)) OF
                                           IntraFreqCellID
CellSynchronisationInfo ::= SEQUENCE {
    modeSpecificInfo CHOICE
                                       CHOICE {
    modeSpecificInfo
                                             SEQUENCE {
                                                CountC-SFN-Frame-difference OPTIONAL, INTEGER(0..38399)
             countC-SFN-Frame-difference
             tm
        },
        tdd
                                                SEQUENCE {
             countC-SFN-Frame-difference
                                                   CountC-SFN-Frame-difference OPTIONAL
    }
}
CellToReport ::=
                                       SEQUENCE {
    bsicReported
                                           BSICReported
CellToReportList ::=
                                       SEQUENCE (SIZE (1..maxCellMeas)) OF
                                           CellToReport
CodePhaseSearchWindow ::=
                                       ENUMERATED {
                                            w1023, w1, w2, w3, w4, w6, w8, w12, w16, w24, w32, w48, w64, w96, w128, w192 }
CountC-SFN-Frame-difference ::= SEQUENCE {
    -- Actual value countC-SFN-High = IE value * 256
    countC-SFN-High
                                       INTEGER (0..15),
                                       INTEGER(0..255)
    off
```

```
}
-- SPARE: CPICH-Ec-No. Max = 49
-- Values above Max are spare
CPICH-Ec-N0 ::=
                                   INTEGER (0..63)
-- SPARE: CPICH- RSCP, Max = 91
-- Values above Max are spare
                                   INTEGER (0..127)
CPICH-RSCP ::=
DataBitAssistance ::=
                                   SEQUENCE {
   ganss-signal-id
                                      GANSS-Signal-Id.
                                       BIT STRING (SIZE (1..1024))
   data-bits
                                 SEQUENCE (SIZE (1..maxGANSSSat)) OF
DataBitAssistanceList ::=
                                      DataBitAssistanceSat
DataBitAssistanceSat ::=
                                   SEQUENCE {
                                      INTEGER (0..63),
   satID
   dataBitAssistanceSgnList
                                       DataBitAssistanceSgnList
DataBitAssistanceSqnList ::= SEQUENCE (SIZE (1..maxSqnType)) OF
                                      DataBitAssistance
DeltaPRC ::=
                                  INTEGER (-127..127)
--Actual value DeltaQrxlevmin = IE value * 2
DeltaQrxlevmin ::= INTEGER (-2..-1)
DeltaRSCP ::= INTEGER (-5..-1)
DeltaRSCPPerCell ::= SEQUENCE {
   deltaRSCP
                                   DeltaRSCP OPTIONAL
-- Actual value DeltaRRC = IE value * 0.032
                                   INTEGER (-7..7)
DeltaRRC ::=
DGANSSInfo ::=
                                   SEQUENCE {
                                   GANSS-Signal-Id
   ganssSignalId
                                                                         OPTIONAL.
   ganssStatusHealth
                                       GANSS-Status-Health,
                                      DGANSSSignalInformationList OPTIONAL
   dgansssignalInformationList
                                  SEQUENCE (SIZE (1..maxSgnType)) OF
DGANSSInfoList ::=
                                      DGANSSInfo
{\tt DGANSSSignalInformation} ::= \\ {\tt SEQUENCE} \ \big\{
                                      INTEGER (0..63),
   satId
                                      BIT STRING (SIZE (10)),
   iode-dganss
   udre
                                       UDRE,
                                      INTEGER (-2047..2047),
                                                                 -- scale factor 0.32
   ganss-prc
                                                                  -- scale factor 0.032
                                      INTEGER (-127..127)
   ganss-rrc
DGANSSSignalInformationList ::= SEQUENCE (SIZE (1..maxGANSSSat)) OF
                                      DGANSSSignalInformation
DGANSS-Sig-Id-Req ::=
                                  BIT STRING (SIZE (8))
DGPS-CorrectionSatInfo ::=
                                   SEQUENCE {
   satID
                                       SatID,
   iode
                                       IODE,
   udre
                                       UDRE,
   prc
                                       PRC,
                                       RRC,
   rrc
-- dummy1 and dummy2 are not used in this version of the specification and should be ignored.
                                  DeltaPRC,
   dummy1
                                  DeltaRRC,
    -- dummy3 and dummy4 are not used in this version of the specification. They should not
   -- be sent and if received they should be ignored.
   dummy3
                                  DeltaPRC
                                                      OPTIONAL.
                                  DeltaRRC
                                                      OPTIONAL
   dummv4
}
DGPS-CorrectionSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
```

DGPS-CorrectionSatInfo

```
DiffCorrectionStatus ::=
                                                       ENUMERATED {
                                                             udre-1-0, udre-0-75, udre-0-5, udre-0-3,
                                                              udre-0-2, udre-0-1, noData, invalidData }
DL-TransportChannelBLER ::=
                                                       INTEGER (0..63)
DopplerUncertainty ::=
                                                       ENUMERATED {
                                                             hz12-5, hz25, hz50, hz100, hz200,
                                                              spare3, spare2, spare1 }
EllipsoidPoint ::= SEQUENCE {
  latitudeSign ENUMERATED { north, south },
  latitude INTEGER (0..8388607),
  longitude INTEGER (-8388608..8388607)
}
EllipsoidPointAltitude ::=
                                                       SEQUENCE {
      latitudeSign ENUMERATED { north, south }, latitude INTEGER (0..8388607), longitude INTEGER (-8388608..8388607),
      altitudeDirection ENUMERATED {height, depth},
      altitude INTEGER (0..32767)
}
EllipsoidPointAltitudeEllipsoide ::=
                                                            SEQUENCE {
      latitudeSign ENUMERATED { north, south },
latitude INTEGER (0..8388607),
longitude INTEGER (-8388608..8388607),
altitudeDirection ENUMERATED {height, depth},
altitude INTEGER (0..32767),
uncertaintySemiMajor INTEGER (0..127),
uncertaintySemiMinor INTEGER (0..127),
-- Actual value orientationMajorAvia - TE value * 2
      -- Actual value orientationMajorAxis = IE value * 2
      orientationMajorAxis INTEGER (0..89),
uncertaintyAltitude INTEGER (0..127),
confidence INTEGER (0..100)
}
EllipsoidPointUncertCircle ::= SEQUENCE {
      latitudeSign ENUMERATED { north, south }, latitude INTEGER (0..8388607), longitude INTEGER (-8388608..8388607), uncertaintyCode INTEGER (0..127)
EllipsoidPointUncertEllipse ::=
                                                     SEOUENCE {
      latitudeSign ENUMERATED { north, south },
latitude INTEGER (0..8388607),
longitude INTEGER (-8388608..8388607),
uncertaintySemiMajor INTEGER (0..127),
uncertaintySemiMinor INTEGER (0..127),
      -- Actual value orientationMajorAxis = IE value * 2
      orientationMajorAxis INTEGER (0..89), confidence INTEGER (0..100)
}
EnvironmentCharacterisation ::=
                                                       ENUMERATED {
                                                              possibleHeavyMultipathNLOS,
                                                              lightMultipathLOS,
                                                              notDefined,
                                                              spare }
                                                       SEQUENCE {
Eventla ::=
      triggeringCondition
                                                             TriggeringCondition2,
      reportingRange
                                                             ReportingRange,
      forbiddenAffectCellList
                                                             ForbiddenAffectCellList
                                                                                                                   OPTIONAL,
      reportDeactivationThreshold
                                                            ReportDeactivationThreshold,
      reportingAmount
                                                            ReportingAmount,
      reportingInterval
                                                             ReportingInterval
}
```

```
SEQUENCE {
Eventla-r4 ::=
   triggeringCondition
                                       TriggeringCondition2,
                                       ReportingRange,
    reportingRange
    {\tt forbiddenAffectCellList}
                                        ForbiddenAffectCellList-r4
                                                                           OPTIONAL,
                                       ReportDeactivationThreshold,
   reportDeactivationThreshold
                                        ReportingAmount,
    reportingAmount
    reportingInterval
                                        ReportingInterval
                                    SEQUENCE {
Eventla-LCR-r4 ::=
                                       TriggeringCondition2,
   triggeringCondition
    reportingRange
                                        ReportingRange,
    forbiddenAffectCellList
                                        ForbiddenAffectCellList-LCR-r4
                                                                               OPTIONAL,
                                        W,
   reportDeactivationThreshold
                                       ReportDeactivationThreshold,
    reportingAmount
                                        ReportingAmount,
                                       ReportingInterval
    reportingInterval
}
Event1b ::=
                                    SEQUENCE {
   triggeringCondition
                                       TriggeringCondition1,
   reportingRange
                                        ReportingRange,
    forbiddenAffectCellList
                                        ForbiddenAffectCellList
                                                                           OPTIONAL.
}
                                   SEQUENCE {
Event1b-r4 ::=
    triggeringCondition
                                       TriggeringCondition1,
    reportingRange
                                        ReportingRange,
    forbiddenAffectCellList
                                        ForbiddenAffectCellList-r4
                                                                           OPTIONAL,
}
Event1b-r7 ::=
                                   SEQUENCE {
   triggeringCondition
                                       TriggeringCondition1,
                                        ReportingRange,
    reportingRange
    forbiddenAffectCellList
                                        ForbiddenAffectCellList-r4
                                                                           OPTIONAL,
   periodicReportingInfo-1b
                                        PeriodicReportingInfo-1b
                                                                           OPTIONAL
}
Event1b-LCR-r4 ::=
                                    SEQUENCE {
   triggeringCondition
                                      TriggeringCondition1,
    reportingRange
                                        ReportingRange,
                                        ForbiddenAffectCellList-LCR-r4
    forbiddenAffectCellList
                                                                               OPTIONAL,
}
                                    SEQUENCE {
Event1c ::=
    replacementActivationThreshold
                                       ReplacementActivationThreshold,
    reportingAmount
                                        ReportingAmount,
   reportingInterval
                                        ReportingInterval
}
Event1d ::=
                                    SEQUENCE {
   triggeringCondition
                                        TriggeringCondition2 OPTIONAL,
   useCIO
                                        BOOLEAN
                                                                OPTIONAL
}
                                SEQUENCE {
Eventle ::=
   triggeringCondition
                                        TriggeringCondition2,
    {\tt thresholdUsedFrequency}
                                        ThresholdUsedFrequency
}
Eventle-r6 ::=
                                SEQUENCE {
   triggeringCondition
                                        TriggeringCondition2,
    {\tt thresholdUsedFrequency}
                                        ThresholdUsedFrequency-r6
}
Event1f ::=
                                SEQUENCE {
   triggeringCondition
                                        TriggeringCondition1,
    thresholdUsedFrequency
                                        ThresholdUsedFrequency
}
Event1f-r6 ::=
                                SEQUENCE {
    {\tt triggeringCondition}
                                        TriggeringCondition1,
```

```
thresholdUsedFrequency
                                     ThresholdUsedFrequency-r6
}
                             SEQUENCE {
Event1j-r6 ::=
   replacementActivationThreshold ReplacementActivationThreshold,
   reportingAmount
                                      ReportingAmount,
   reportingInterval
                                     ReportingInterval
}
Event2a ::=
                                 SEQUENCE {
   -- dummy is not used in this version of the specification and should be ignored
   dummy
                                      Threshold,
   usedFreqW
                                      HysteresisInterFreq,
   hysteresis
   timeToTrigger
                                      TimeToTrigger,
   reportingCellStatus
                                     ReportingCellStatus
                                                                       OPTIONAL,
                                     NonUsedFreqParameterList
                                                                    OPTIONAL
   nonUsedFreqParameterList
}
Event2a-r6 ::=
                                  SEQUENCE {
   usedFreqW
                                     W,
   hysteresis
                                      HysteresisInterFreq,
   timeToTrigger
                                      TimeToTrigger,
   reportingCellStatus
                                     ReportingCellStatus
                                                                       OPTIONAL.
   nonUsedFreqParameterList
                                     NonUsedFreqWList-r6
                                                                        OPTIONAL
}
Event2b ::=
                                 SEQUENCE {
   usedFreqThreshold
                                   Threshold,
   usedFreqW
                                      W,
   hysteresis
                                      HysteresisInterFreq,
                                     TimeToTrigger,
   timeToTrigger
                                                                       OPTIONAL,
   reportingCellStatus
                                     ReportingCellStatus
                                    NonUsedFreqParameterList
   nonUsedFreqParameterList
                                                                        OPTIONAL
}
Event2b-r6 ::=
                                 SEQUENCE {
   usedFreqThreshold
                                      Threshold-r6,
   usedFreqW
                                      W,
   hysteresis
                                     HysteresisInterFreq,
   timeToTrigger
                                      TimeToTrigger,
   reportingCellStatus
                                     ReportingCellStatus
                                                                        OPTIONAL,
                                     NonUsedFreqParameterList-r6
   nonUsedFreqParameterList
                                                                       OPTIONAL
}
Event2c ::=
                                  SEQUENCE {
                                     HysteresisInterFreq,
   hysteresis
   timeToTrigger
                                      TimeToTrigger,
   reportingCellStatus
                                      ReportingCellStatus
                                                                        OPTIONAL,
                                    NonUsedFreqParameterList
   nonUsedFreqParameterList
}
Event2c-r6 ::=
                                  SEQUENCE {
   hysteresis
                                     HysteresisInterFreq,
   timeToTrigger
                                      TimeToTrigger,
   reportingCellStatus
                                     ReportingCellStatus
                                                                        OPTIONAL,
                                     NonUsedFreqParameterList-r6
   nonUsedFreqParameterList
                                                                        OPTIONAL
}
                                  SEQUENCE {
Event2d ::=
   usedFreqThreshold
                                      Threshold,
   usedFreqW
                                      W,
                                     HysteresisInterFreq,
   hysteresis
   timeToTrigger
                                      TimeToTrigger,
                                                                       OPTIONAL
   reportingCellStatus
                                     ReportingCellStatus
}
Event2d-r6 ::=
                                  SEQUENCE {
   usedFreqThreshold
                                      Threshold-r6,
   usedFreqW
   hysteresis
                                     HysteresisInterFreq,
   timeToTrigger
                                      TimeToTrigger,
   reportingCellStatus
                                      ReportingCellStatus
                                                                        OPTIONAL
}
                                  SEQUENCE {
Event2e ::=
   hvsteresis
                                      HysteresisInterFreq,
   timeToTrigger
                                      TimeToTrigger,
```

```
reportingCellStatus
                                        ReportingCellStatus
                                                                            OPTIONAL,
   nonUsedFreqParameterList
                                       NonUsedFreqParameterList
                                                                            OPTIONAL
}
Event2e-r6 ::=
                                    SEQUENCE {
   hysteresis
                                      HysteresisInterFreq,
    timeToTrigger
                                       TimeToTrigger,
                                                                           OPTIONAL.
   reportingCellStatus
                                       ReportingCellStatus
                                      NonUsedFreqParameterList-r6
   nonUsedFreqParameterList
                                                                           OPTIONAL
                                   SEQUENCE {
Event2f ::=
   usedFreqThreshold
                                       Threshold,
   usedFreqW
                                       W,
   hysteresis
                                       HysteresisInterFreq,
                                       TimeToTrigger,
   timeToTrigger
   reportingCellStatus
                                       ReportingCellStatus
                                                                           OPTIONAL
}
Event2f-r6 ::=
                                    SEQUENCE {
   usedFreqThreshold
                                       Threshold-r6,
    usedFreqW
                                       W,
    hysteresis
                                       HysteresisInterFreq,
    timeToTrigger
                                       TimeToTrigger,
   reportingCellStatus
                                       ReportingCellStatus
                                                                           OPTIONAL
}
                                    SEQUENCE {
Event3a ::=
   thresholdOwnSystem
                                       Threshold,
                                       W.
    thresholdOtherSystem
                                       Threshold,
   hysteresis
                                       Hysteresis,
                                       TimeToTrigger,
    timeToTrigger
                                                                           OPTIONAL
    reportingCellStatus
                                       ReportingCellStatus
}
                                    SEQUENCE {
Event3b ::=
   thresholdOtherSystem
                                       Threshold,
   hvsteresis
                                       Hysteresis,
   timeToTrigger
                                       TimeToTrigger,
    reportingCellStatus
                                       ReportingCellStatus
                                                                           OPTIONAL
}
Event3c ::=
                                    SEQUENCE {
    thresholdOtherSystem
                                       Threshold,
    hysteresis
                                       Hysteresis,
    timeToTrigger
                                       TimeToTrigger,
    reportingCellStatus
                                       ReportingCellStatus
                                                                           OPTIONAL
}
                                   SEQUENCE {
Event3d ::=
   hysteresis
                                       Hysteresis,
    timeToTrigger
                                        TimeToTrigger,
   reportingCellStatus
                                       ReportingCellStatus
                                                                          OPTIONAL
EventIDInterFreq ::=
                                    ENUMERATED {
                                       e2a, e2b, e2c, e2d, e2e, e2f, spare2, spare1 }
                                    ENUMERATED {
EventIDInterRAT ::=
                                       e3a, e3b, e3c, e3d }
EventIDIntraFreq ::=
                                    ENUMERATED {
                                        ela, elb, elc, eld, ele,
                                        elf, elg, elh, eli, elj,
                                        spare6, spare5, spare4, spare3, spare2,
                                        spare1 }
                                   CHOICE {
EventResults ::=
    intraFreqEventResults
                                      IntraFreqEventResults,
   interFreqEventResults
interRATEventResults
                                       InterFreqEventResults,
                                       InterRATEventResults,
                                    TrafficVolumeEventResults,
    trafficVolumeEventResults
    qualityEventResults
                                       QualityEventResults,
    ue-InternalEventResults
                                       UE-InternalEventResults,
    \verb"ue-positioning-MeasurementEventResults" UE-Positioning-MeasurementEventResults",
    spare
                                       NULL
```

```
}
EventResults-v770ext ::=
                                  CHOICE {
   ue-positioning-MeasurementEventResults UE-Positioning-MeasurementEventResults-v770ext
                                   SEQUENCE {
ExtraDoppler ::=
   -- Doppler 1st order term, -0.2..+0.1 m/s2
   -- ( = -42..+21 with 1/210 m/s2 resolution)
    dopplerFirstOrder
                                       INTEGER (-42.. 21),
                                       ENUMERATED { dopU40, dopU20, dopU10, dopU5, dopU2-5,
    dopplerUncertainty
                                           spare3, spare2, spare1 }
}
ExtraDopplerInfo ::=
                                   SEQUENCE {
   -- Actual value doppler1stOrder = IE value * 0.023
                                       INTEGER (-42..21),
    doppler1stOrder
   dopplerUncertainty
                                       DopplerUncertainty
{\tt FACH-MeasurementOccasionInfo} ::= \qquad {\tt SEQUENCE} \ \big\{
    fACH-meas-occasion-coeff INTEGER (1..12) inter-freg-FDD-meas-ind BOOLEAN
                                                                           OPTIONAL,
    inter-freq-FDD-meas-ind
                                       BOOLEAN,
    -- inter-freq-TDD-meas-ind is for 3.84Mcps TDD and 7.68 Mcps TDD. For 1.28Mcps TDD, the IE in
    -- FACH-MeasurementOccasionInfo-LCR-r4-ext is used.
    inter-freq-TDD-meas-ind
                                      BOOLEAN,
    inter-RAT-meas-ind
                                       SEQUENCE (SIZE (1..maxOtherRAT)) OF
                                                                           OPTIONAL
                                           RAT-Type
}
FACH-MeasurementOccasionInfo-LCR-r4-ext ::= SEQUENCE {
    inter-freq-TDD128-meas-ind
FilterCoefficient ::=
                                   ENUMERATED {
                                       fc0, fc1, fc2, fc3, fc4, fc5,
                                       fc6, fc7, fc8, fc9, fc11, fc13,
                                       fc15, fc17, fc19, spare1 }
-- Actual value FineSFN-SFN = IE value * 0.0625
FineSFN-SFN ::=
                                   INTEGER (0..15)
ForbiddenAffectCell ::=
                                   CHOICE {
    fdd
                                       PrimaryCPICH-Info,
    tdd
                                       PrimaryCCPCH-Info
}
                                   CHOICE {
ForbiddenAffectCell-r4 ::=
   fdd
                                       PrimaryCPICH-Info,
                                       PrimaryCCPCH-Info-r4
}
ForbiddenAffectCell-LCR-r4 ::=
                                   SEQUENCE {
                                       PrimaryCCPCH-Info-LCR-r4
ForbiddenAffectCellList ::=
                                   SEQUENCE (SIZE (1..maxCellMeas)) OF
                                       ForbiddenAffectCell
                                       SEQUENCE (SIZE (1..maxCellMeas)) OF
ForbiddenAffectCellList-r4 ::=
                                       ForbiddenAffectCell-r4
ForbiddenAffectCell-LCR-r4
FreqQualityEstimateQuantity-FDD ::= ENUMERATED {
                                       cpich-Ec-N0,
                                       cpich-RSCP }
FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
                                       primaryCCPCH-RSCP }
                                   SEQUENCE {
GanssDataBits ::=
   ganssTod
                                       INTEGER (0..86399),
    dataBitAssistance
                                       ReqDataBitAssistance
GANSSDecipheringKeys ::=
                                   SEQUENCE {
```

```
currentDecipheringKey
                                         BIT STRING (SIZE (56)),
                                           BIT STRING (SIZE (56))
    nextDecipheringKey
}
GANSSGenericData ::=
                                       SEQUENCE {
                                         INTEGER (0..7)
                                                                                                 OPTIONAL,
    ganssId
    ganssTimeModelsList
                                            GANSSTimeModelsList
                                                                                                 OPTIONAL.
    uePositioningDGANSSCorrections
                                           UE-Positioning-DGANSSCorrections
                                                                                                 OPTIONAL,
                                                                                                 OPTIONAL,
    uePositioningGANSSNavigationModel UE-Positioning-GANSS-NavigationModel
    uePositioningGANSSRealTimeIntegrityUE-Positioning-GANSS-RealTimeIntegrityuePositioningGANSSDataBitAssistanceUE-Positioning-GANSS-Data-Bit-Assistance
                                                                                                 OPTIONAL,
                                                                                                 OPTIONAL,
    \hbox{\tt uePositioningGANSSReferenceMeasurementInfo}
                                           UE-Positioning-GANSS-ReferenceMeasurementInfo OPTIONAL,
    uePositioningGANSSAlmanac
                                           UE-Positioning-GANSS-Almanac
                                                                                                 OPTIONAL,
    uePositioningGANSSUTCModel
                                           UE-Positioning-GANSS-UTCModel
                                                                                                 OPTIONAL
}
                            SEQUENCE (SIZE (1..maxGANSS)) OF
GANSSGenericDataList ::=
                                           GANSSGenericData
{\tt GANSSGenericMeasurementInfo::=} \qquad {\tt SEQUENCE (SIZE (1..maxGANSS)) OF SEQUENCE \{}
                                       INTEGER (0..7)
    ganssId
                                                                                   OPTIONAL,
    ganssMeasurementSignalList
                                            {\tt GANSSMeasurementSignalList}
GANSSMeasurementParameters ::=
                                     SEQUENCE (SIZE (1..maxGANSSSat)) OF SEQUENCE {
    satId
                                          INTEGER (0..63),
    cSurNzero
                                            INTEGER (0..63),
                                           ENUMERATED { nm, low, medium, high },
    multipathIndicator
                                      BIT STRING (SIZE (2))
INTEGER (0..2097151),
INTEGER (0..63)
    carrierQualityIndication
                                                                                   OPTIONAL.
    ganssCodePhase
    ganssIntegerCodePhase
                                                                                   OPTIONAL,
    codePhaseRmsError
                                            INTEGER (0..63),
                                            INTEGER (-32768..32767),
    doppler
    adr
                                           INTEGER (0..33554431)
                                                                                   OPTIONAL
}
{\tt GANSSMeasurementSignalList::=} \qquad {\tt SEQUENCE (SIZE (1..maxSgnType)) \ OF \ SEQUENCE } \{
    ganssCodePhaseAmbiguity GANSS-Signal-Id INTEGER (0..31) ganssMeasurementParameters GANSSMeasurement
                                                                                   OPTIONAL.
                                                                                   OPTIONAL,
                                           GANSSMeasurementParameters
GanssNavigationModelAdditionalData ::= SEQUENCE {
    ganssWeek
                                           INTEGER (0..4095),
    ganssToe
                                            INTEGER (0..167),
                                           INTEGER (0..10),
    t-toeLimit
    satellitesListRelatedDataList SatellitesListRelatedDataList OPTIONAL
GANSSReferenceTimeOnly ::= SEQUENCE {
    qANSS-tod
                                           INTEGER (0..3599999),
    gANSS-timeId
                                            INTEGER (0..7)
                                                                                   OPTIONAL,
    gANSS-tod-uncertainty
                                           INTEGER (0..127)
                                                                                   OPTIONAL
}
                                      SEQUENCE {
GanssReqGenericData ::=
    ganssId INTEGER (0..7)
ganssRealTimeIntegrity BOOLEAN,
ganssDifferentialCorrection DGANSS-Sig-Id-Req
ganssAlmanac BOOLEAN,
ganssNavigationModel
                                                                                   OPTIONAL,
                                                                                   OPTIONAL.
    ganssNavigationModel BUOLEAN,
ganssTimeModelGNSS-GNSS BIT STRING (SIZE (8))
ganssReferenceMeasurementInfo BOOLEAN,
ConcedetaRits
                                                                                   OPTIONAL,
    ganssDataBits
                                           GanssDataBits
                                                                                   OPTIONAL.
    ganssUTCModel
                                            BOOLEAN,
    ganssNavigationModelAdditionalData GanssNavigationModelAdditionalData OPTIONAL
}
GanssRequestedGenericAssistanceDataList ::= SEQUENCE (SIZE (1..maxGANSS)) OF
                                            GanssReqGenericData
GANSSSatelliteInformation ::=
                                     SEQUENCE {
    ganssSatId
                                           INTEGER (0..63),
                                            INTEGER (-2048..2047),
    dopplerZeroOrder
                                                                              -- scale factor 0.5m/s
    extraDoppler
                                           ExtraDoppler
                                                                                  OPTIONAL,
                                           INTEGER (0..1023),
INTEGER (0..127),
    codePhase
    integerCodePhase
```

```
codePhaseSearchWindow BIT STRING (SIZE (5)), azimuthandElevation AzimuthAndElevation
                                                                                                  OPTIONAL
    azimuthandElevation
                                                  AzimuthAndElevation
}
GANSSSatelliteInformationList ::= SEQUENCE (SIZE (1..maxGANSSSat)) OF
                                                 GANSSSatelliteInformation
GANSSTimeModelsList ::= SEQUENCE (SIZE (1..maxGANSS-1)) OF
                                                  UE-Positioning-GANSS-TimeModel
{\tt GANSS-SAT-Info-Almanac-Kp} \ ::= \ \ {\tt SEQUENCE} \ \big\{
                                             INTEGER(0..63),
BIT STRING (SIZE (11)),
     svId
     ganss-alm-e

        ganss-alm-e
        BIT STRING (SIZE (11)),

        ganss-delta-I-alm
        BIT STRING (SIZE (11)),

        ganss-omegadot-alm
        BIT STRING (SIZE (11)),

        ganss-svhealth-alm
        BIT STRING (SIZE (4)),

        ganss-delta-a-sqrt-alm
        BIT STRING (SIZE (17)),

        ganss-omegazero-alm
        BIT STRING (SIZE (16)),

        ganss-omega-alm
        BIT STRING (SIZE (16)),

        ganss-af-zero-alm
        BIT STRING (SIZE (14)),

        ganss-af-one-alm
        BIT STRING (SIZE (14)),

    ganss-af-zero-alm
ganss-af-one-alm
                                                 BIT STRING (SIZE (11))
GANSS-SAT-Info-Almanac-KpList ::= SEQUENCE (SIZE (1..maxGANSSSat)) OF
                                                  GANSS-SAT-Info-Almanac-Kp
Ganss-Sat-Info-Nav ::= SEQUENCE {
                                                  INTEGÈR (0..63),
    satId
                                                   BIT STRING (SIZE (5)),
     svHealth
     iod
                                                   BIT STRING (SIZE (10)),
    ganssClockModel
                                                  UE-Positioning-GANSS-ClockModel,
     ganssOrbitModel
                                                   UE-Positioning-GANSS-OrbitModel
}
Ganss-Sat-Info-NavList ::= SEQUENCE (SIZE (1..maxGANSSSat)) OF
                                                  Ganss-Sat-Info-Nav
                                             INTEGER (0..7)
GANSS-Signal-Id ::=
GANSS-Status-Health ::=
                                              ENUMERATED {
                                                  udre-scale-1dot0.
                                                   udre-scale-0dot75,
                                                   udre-scale-0dot5,
                                                   udre-scale-0dot3,
                                                   udre-scale-0dot2,
                                                   udre-scale-0dot1,
                                                   no-data,
                                                   invalid-data }
GANSS-Storm-Flag ::=
                                             SEQUENCE {
    storm-flag-one
                                                  BOOLEAN,
     storm-flag-two
                                                   BOOLEAN,
     storm-flag-three
                                                   BOOLEAN,
     storm-flag-four
                                                  BOOLEAN,
     storm-flag-five
                                                   BOOLEAN
}
GPS-MeasurementParam ::= SEQUENCE {
     satelliteID
                                               INTEGER (0..63),
                                                   INTEGER (0..63),
     c-N0
     doppler
                                                   INTEGER (-32768..32768),
    wholeGPS-Chips
                                                  INTEGER (0..1022),
     fractionalGPS-Chips
                                                   INTEGER (0..1023),
    multipathIndicator
                                                MultipathIndicator,
    pseudorangeRMS-Error
                                                  INTEGER (0..63)
{\tt GPS-MeasurementParamList ::= } \qquad {\tt SEQUENCE (SIZE (1..maxSat)) \ OF}
                                                  GPS-MeasurementParam
GSM-CarrierRSSI ::=
                                             BIT STRING (SIZE (6))
GSM-MeasuredResults ::=
                                              SEQUENCE {
                                                  GSM-CarrierRSSI
                                                                                                 OPTIONAL,
     -- dummy is not used in this version of the specification, it should
     -- not be sent and if received it should be ignored.
```

```
dummy
                                      INTEGER (46..173)
                                                                        OPTIONAL,
   bsicReported
                                      BSICReported,
   -- dummy2 is not used in this version of the specification, it should
   -- not be sent and if received it should be ignored.
                                      ObservedTimeDifferenceToGSM
                                                                       OPTIONAL
GSM-MeasuredResultsList ::= SEQUENCE (SIZE (1..maxReportedGSMCells)) OF
                                      GSM-MeasuredResults
GPS-TOW-1msec ::=
                                 INTEGER (0..604799999)
                                  INTEGER (0..604799)
GPS-TOW-1sec ::=
GPS-TOW-Assist ::=
                                  SEQUENCE {
  satID
                                     SatID,
                                      BIT STRING (SIZE (14)),
   tlm-Message
   tlm-Reserved
                                     BIT STRING (SIZE (2)),
   alert
   antiSpoof
                                      BOOLEAN
}
GPS-TOW-AssistList ::=
                                 SEQUENCE (SIZE (1..maxSat)) OF
                                     GPS-TOW-Assist
HCS-CellReselectInformation-RSCP ::=
                                         SEQUENCE {
   -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime-RSCP
   penaltyTime
                                             PenaltyTime-RSCP
}
HCS-CellReselectInformation-ECN0 ::=
                                        SEQUENCE {
   -- TABULAR: The default value for penaltyTime is "notUsed"
   -- Temporary offset is nested inside PenaltyTime-ECN0
   penaltyTime
                                      PenaltyTime-ECN0
}
HCS-NeighbouringCellInformation-RSCP ::= SEQUENCE {
                                                                        DEFAULT 0.
   hcs-PRIO
                                     HCS-PRIO
   q-HCS
                                      O-HCS
                                                                        DEFAULT 0,
   hcs-CellReselectInformation
                                      HCS-CellReselectInformation-RSCP
HCS-NeighbouringCellInformation-ECN0 ::= SEQUENCE {
   hcs-PRIO
                                    HCS-PRIO
                                                                        DEFAULT 0,
   q-HCS
                                      Q-HCS
                                                                        DEFAULT 0,
   hcs-CellReselectInformation
                                     HCS-CellReselectInformation-ECN0
}
                                 INTEGER (0..7)
HCS-PRIO ::=
HCS-ServingCellInformation ::=
                                SEQUENCE {
  hcs-PRIO
                                    HCS-PRIO
                                                                        DEFAULT 0,
                                                                        DEFAULT 0,
   q-HCS
                                      Q-HCS
                                      T-CRMax
                                                                        OPTIONAL
   t-CR-Max
}
HorizontalVelocity ::=
                                SEQUENCE {
   bearing
                                     INTEGER (0..359),
                                     INTEGER (0..2047)
   horizontalSpeed
HorizontalWithVerticalVelocity ::= SEQUENCE {
   verticalSpeedDirection
                                     ENUMERATED { upward, downward },
                                      INTEGER (0..359),
   bearing
   horizontalSpeed
                                      INTEGER (0..2047),
                                      INTEGER (0..255)
   verticalSpeed
}
\label{thm:contalvelocityWithUncertainty::= SEQUENCE } \{ \\
                                     INTEGER (0..359),
   horizontalSpeed
                                      INTEGER (0..2047),
   horizontalSpeedUncertainty
                                     INTEGER (0..255)
}
HorizontalWithVerticalVelocityAndUncertainty ::=
                                                 SEQUENCE {
   INTEGER (0..359),
   bearing
```

```
horizontalSpeed
                                                   INTEGER (0..2047),
     verticalSpeed
                                                    INTEGER (0..255),
                                               INTEGER (0..255),
INTEGER (0..255),
    horizontalUncertaintySpeed
verticalUncertaintySpeed
                                                  INTEGER (0..255)
-- Actual value Hysteresis = IE value * 0.5
                                              INTEGER (0..15)
Hysteresis ::=
-- Actual value HysteresisInterFreq = IE value * 0.5
HysteresisInterFreq ::=
                                              INTEGER (0..29)
                            SEQUENCE {
Freque
InterFreqCell ::=
     frequencyInfo
                                                   CellMeasurementEventResults
}
InterFreqCell-LCR-r4 ::= SEQUENCE {
    frequencyInfo
                                                  FrequencyInfo,
     nonFreqRelatedEventResults
                                                   CellMeasurementEventResults-LCR-r4
InterFreqCellID ::=
                                              INTEGER (0..maxCellMeas-1)
    removedInterFreqCellList Removed
newInterFreqCellList NewInte
cellsForInterFreqMeasList CellsFo
InterFreqCellInfoList ::=
                                              RemovedInterFreqCellList
                                                                                                 OPTIONAL,
                                                  NewInterFreqCellList
                                               CellsForInterFreqMeasList
                                                                                                  OPTIONAL
}
InterFreqCellInfoList-r4 ::= SEQUENCE {
   removedInterFreqCellList RemovedInterFreqCellList
   newInterFreqCellList NewInterFreqCellList-r4
   cellsForInterFreqMeasList CellsForInterFreqMeasList
                                                                                                  OPTIONAL,
                                                                                                 OPTIONAL
}
InterFreqCellInfoSI-List-RSCP ::= SEQUENCE {
   removedInterFreqCellList
   newInterFreqCellList
   NewInterFreqCellSI-List-R
                                                   kemovedInterFreqCellList
NewInterFreqCellSI-List-RSCP
                                                                                                OPTIONAL,
     newInterFreqCellList
}
InterFreqCellInfoSI-List-ECN0 ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList
    newInterFreqCellList NewInterFreqCellSI-List-ECN0
                                                   RemovedInterFreqCellList OPTIONAL, NewInterFreqCellSI-List-ECNO OPTIONAL
     newInterFreqCellList
}
                                                       SEQUENCE {
InterFreqCellInfoSI-List-HCS-RSCP ::=
    removedInterFreqCellList SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-RSCP OPTIONAL
}
InterFreqCellInfoSI-List-HCS-ECN0 ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL NewInterFreqCellSI-List-HCS-ECN0 OPTIONAL
                                                                                                 OPTIONAL,
InterFreqCellInfoSI-List-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    NewInterFreqCellSI-List-RSCP-LCR-r4 OPTIONAL
InterFreqCellInfoSI-List-ECN0-LCR ::=
                                                      SEQUENCE {
     removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
newInterFreqCellList NewInterFreqCellSI-List-ECN0-LCR-r4 OPTIONAL
     newInterFreqCellList
}
InterFreqCellInfoSI-List-HCS-RSCP-LCR ::=
                                                            SEQUENCE {
     removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
newInterFreqCellList NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 OPTIONAL
InterFreqCellInfoSI-List-HCS-ECNO-LCR ::=
                                                              SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL, newInterFreqCellList NewInterFreqCellSI-List-HCS-ECNO-LCR-r4 OPTIONAL
InterFreqCellList ::=
                                SEQUENCE (SIZE (1..maxFreq)) OF
                                                   InterFreqCell
InterFreqCellList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxFreq)) OF
```

InterFreqCell-LCR-r4

```
InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                       CellMeasuredResults
InterFreqEvent ::=
                                  CHOICE {
   event2a
                                      Event2a,
   event.2b
                                       Event.2b.
   event2c
                                      Event2c,
    event2d
                                       Event2d,
    event2e
                                      Event2e,
    event2f
                                      Event.2f
}
InterFreqEvent-r6 ::=
                                  CHOICE {
                                    Event2a-r6,
   event2a
    event2b
                                       Event2b-r6,
    event2c
                                      Event2c-r6,
   event.2d
                                      Event2d-r6.
    event2e
                                       Event2e-r6,
                                       Event2f-r6
    event2f
}
                         SEQUENCE (SIZE (1..maxMeasEvent)) OF
InterFreqEventList ::=
                                      InterFreqEvent
InterFreqEventList-r6 ::=
                                 SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                      InterFreqEvent-r6
--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in InterFrequencyMeasuredResultsList
--The IE is only used for measured results and not for additional measured results.
InterFrequencyMeasuredResultsList-v590ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                               DeltaRSCPPerCell
Inter-FreqEventCriteria-v590ext ::= SEQUENCE {
                                   DeltaRSCP,
   threholdUsedFrequency-delta
    threholdNonUsedFrequency-deltaList
                                          ThreholdNonUsedFrequency-deltaList OPTIONAL
--The order of the list corresponds to the order of the events in Inter-FreqEventList
Inter-FreqEventCriteriaList-v590ext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                           Inter-FreqEventCriteria-v590ext
--The order of the list corresponds to the order of relevant events in Intra-FreqEventCriteriaList
--i.e. the first element of the list corresponds to the first occurance of event 1e, 1f, 1h, 1i,
--the second element of the list corresponds to the second occurance of event 1e, 1f, 1h, 1i
Intra-FreqEventCriteriaList-v590ext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                           DeltaRSCP
--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in IntraFrequencyMeasuredResultsList
--The IE is only used for measured results and not for additional measured results.
IntraFrequencyMeasuredResultsList-v590ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                               DeltaRSCPPerCell
IntraFreqReportingCriteria-1b-r5 ::= SEQUENCE {
   periodicReportingInfo-1b
                                      PeriodicReportingInfo-1b
PeriodicReportingInfo-1b ::= SEQUENCE {
    reportingAmount
                                       ReportingAmount,
   reportingInterval
                                      ReportingInterval
}
InterFreqEventResults ::= SEQUENCE {
                                       EventiDInterFreq,
    eventID
    interFreqCellList
                                       InterFreqCellList
                                                                         OPTIONAL
}
InterFreqEventResults-LCR-r4-ext ::= SEQUENCE {
    eventID
                                       EventIDInterFreq,
                                      InterFreqCellList-LCR-r4-ext
                                                                         OPTIONAL
    interFreqCellList
InterFreqMeasQuantity ::= SEQUENCE {
   reportingCriteria CHOICE
       CHOICE {
intraFreqReportingCriteria SECTI
   reportingCriteria
                                       SEQUENCE {
```

```
intraFreqMeasQuantity
                                                                                   IntraFreqMeasQuantity
              interFreqReportingCriteria SEQUENCE {
                                                                                     FilterCoefficient
                     filterCoefficient
                                                                                                                                    DEFAULT fc0,
                     modeSpecificInfo
                                                                                     CHOICE {
                                                                                           SEQUENCE {
                            fdd
                                    freqQualityEstimateQuantity-FDD
                                                                                                   FreqQualityEstimateQuantity-FDD
                            tdd
                                                                                            SEQUENCE {
                                    freqQualityEstimateQuantity-TDD
                                                                                                  FreqQualityEstimateQuantity-TDD
                     }
             }
       }
}
InterFreqMeasuredResults ::=
                                                                SEQUENCE {
       frequencyInfo
                                                                      FrequencyInfo
                                                                                                                                       OPTIONAL,
       utra-CarrierRSSI
                                                                       UTRA-CarrierRSSI
       OPTIONAL
}
InterFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxFreq)) OF
                                                                       InterFreqMeasuredResults
InterFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
       interFreqCellInfoSI-List
                                                                              InterFreqCellInfoSI-List-RSCP OPTIONAL
}
InterFreqMeasurementSysInfo-ECN0 ::= SEQUENCE {
    InterFreqCellInfoSI-List-ECN0
\label{eq:continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous
       interFreqCellInfoSI-List
                                                                     InterFreqCellInfoSI-List-HCS-RSCP OPTIONAL
InterFreqMeasurementSysInfo-HCS-ECN0 ::= SEQUENCE {
       interFreqCellInfoSI-List
                                                                      InterFreqCellInfoSI-List-HCS-ECN0 OPTIONAL
InterFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
       interFreqCellInfoSI-List
                                                                              InterFreqCellInfoSI-List-RSCP-LCR
                                                                                                                                                      OPTIONAL
}
InterFreqMeasurementSysInfo-ECN0-LCR-r4 ::=
                                                                                  SECUENCE {
       interFreqCellInfoSI-List
                                                                     InterFreqCellInfoSI-List-ECNO-LCR OPTIONAL
InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
       InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 ::=
                                                                                          SEQUENCE {
       interFreqCellInfoSI-List
                                                                     InterFreqCellInfoSI-List-HCS-ECNO-LCR OPTIONAL
InterFreqRACHRepCellsList ::= SEQUENCE (SIZE (1..maxFreq)) OF
InterFreqCellID
Dummy-InterFreqRACHReportingInfo ::= SEQUENCE {
      modeSpecificInfo
                                                                      CHOICE {
                                                                              SEQUENCE {
              fdd
                     interFreqRepQuantityRACH-FDD
                                                                                    InterFreqRepQuantityRACH-FDD
              },
              tdd
                                                                              SEQUENCE {
                     interFreqRepQuantityRACH-TDDList
                                                                                   InterFreqRepQuantityRACH-TDDList
       interFreqRACHReportingThreshold
                                                                       Threshold,
       maxReportedCellsOnRACHinterFreq MaxReportedCellsOnRACHinterFreq
}
InterFreqRACHReportingInfo ::= SEQUENCE {
       modeSpecificInfo
                                                                       CHOICE {
              fdd
                                                                              SEQUENCE {
                     interFreqRepQuantityRACH-FDD
                                                                                     InterFreqRepQuantityRACH-FDD
```

```
},
        tdd
                                            SEQUENCE {
            interFreqRepQuantityRACH-TDDList
                                               InterFreqRepQuantityRACH-TDDList
        }
    interFreqRACHReportingThreshold Threshold,
    maxReportedCellsOnRACHinterFreq MaxReportedCellsOnRACHinterFreq
}
InterFreqReportCriteria ::=
                                    CHOICE {
                                    IntraFreqReportingCriteria,
    intraFreqReportingCriteria
    interFreqReportingCriteria
                                        InterFreqReportingCriteria,
                                        PeriodicalWithReportingCellStatus,
    periodicalReportingCriteria
    noReporting
                                        ReportingCellStatusOpt
                                    CHOICE {
InterFreqReportCriteria-r4 ::=
    intraFreqReportingCriteria
                                       IntraFreqReportingCriteria-r4,
    interFreqReportingCriteria
                                        InterFreqReportingCriteria,
    periodicalReportingCriteria
                                        PeriodicalWithReportingCellStatus,
                                        {\tt ReportingCellStatusOpt}
    noReporting
                                    CHOICE {
InterFreqReportCriteria-r6 ::=
    intraFreqReportingCriteria
                                       IntraFreqReportingCriteria-r6,
                                        InterFreqReportingCriteria-r6,
    interFreqReportingCriteria
    periodicalReportingCriteria
                                       PeriodicalWithReportingCellStatus,
                                       ReportingCellStatusOpt
    noReporting
}
                                    CHOICE {
InterFreqReportCriteria-r7 ::=
    intraFreqReportingCriteria
                                     IntraFreqReportingCriteria-r7,
    interFreqReportingCriteria
                                        InterFreqReportingCriteria-r6,
                                        PeriodicalWithReportingCellStatus,
    {\tt periodicalReportingCriteria}
    noReporting
                                       ReportingCellStatusOpt
}
                                    SEQUENCE {
InterFreqReportingCriteria ::=
                                       InterFreqEventList
    interFreqEventList
                                                                            OPTIONAL
}
InterFreqReportingCriteria-r6 ::= SEQUENCE {
    \verb"interFreqEventList"
                                      InterFreqEventList-r6
                                                                            OPTIONAL
InterFreqReportingQuantity ::=
                                    SEQUENCE {
                                    BOOLEAN,
   utra-Carrier-RSSI
    frequencyQualityEstimate
                                       BOOLEAN,
    nonFreqRelatedQuantities
                                       CellReportingQuantities
}
InterFreqRepQuantityRACH-FDD ::= ENUMERATED {
                                       cpich-EcN0, cpich-RSCP }
-- dummy is not used in this version of the specification, it should
-- not be sent and if received the UE behaviour is not specified.
InterFreqRepQuantityRACH-TDD ::= ENUMERATED {
                                        dummy,
                                        primaryCCPCH-RSCP }
InterFreqRepQuantityRACH-TDDList ::= SEQUENCE (SIZE (1..2)) OF
                                        InterFreqRepQuantityRACH-TDD
                                  SEQUENCE {
InterFrequencyMeasurement ::=
                                       InterFreqCellInfoList,
    interFreqCellInfoList
    interFreqMeasQuantity
                                       InterFreqMeasQuantity
                                                                            OPTIONAL,
                                        InterFreqReportingQuantity
    interFreqReportingQuantity
                                                                            OPTIONAL,
    measurementValidity
                                       MeasurementValidity
                                                                            OPTIONAL,
    interFreqSetUpdate
                                        UE-AutonomousUpdateMode
                                                                           OPTIONAL,
    reportCriteria
                                        InterFreqReportCriteria
InterFrequencyMeasurement-r4 ::= SEQUENCE {
                                    InterFreqCellInfoList-r4,
    interFreqCellInfoList
    interFreqMeasQuantity
                                    InterFreqMeasQuantity
InterFreqReportingQuantity
MeasurementVoltari
                                        InterFreqMeasQuantity
                                                                            OPTIONAL,
    interFreqReportingQuantity
                                                                           OPTIONAL,
    measurement Validity
                                       MeasurementValidity
                                                                            OPTIONAL,
    interFreqSetUpdate
                                        UE-AutonomousUpdateMode
                                                                            OPTIONAL,
```

```
reportCriteria
                                             InterFreqReportCriteria-r4
}
\label{eq:continuous_section} \mbox{InterFrequencyMeasurement-r6} ::= \mbox{SEQUENCE} \ \big\{
    interFreqCellInfoList InterFreqCellInfoList-r4,
interFreqMeasQuantity InterFreqMeasQuantity
interFreqReportingQuantity InterFreqReportingQuantity
measurementValidity MeasurementValidity
interFreqSetUpdate UE-AutonomousUpdateMode
                                                                                     OPTIONAL,
                                                                                       OPTIONAL,
                                                                                       OPTIONAL,
     reportCriteria
                                             InterFreqReportCriteria-r6
}
OPTIONAL,
                                             InterFreqReportingQuantity
                                                                                     OPTIONAL,
                                                                                      OPTIONAL,
                                                                                       OPTIONAL.
     reportCriteria
                                             InterFreqReportCriteria-r7
}
InterRAT-TargetCellDescription ::= SEQUENCE {
     technologySpecificInfo
                                             CHOICE {
                                                  SEQUENCE {
         qsm
                                                       BSTC.
             bsic
              frequency-band
                                                       Frequency-Band,
             bcch-ARFCN
                                                       BCCH-ARFCN,
             ncMode
                                                       NC-Mode
                                                                             OPTIONAL
         is-2000
                                                  NULL,
         spare2
                                                  NULL,
         spare1
                                                  NULL
}
InterRATCellID ::=
                                    INTEGER (0..maxCellMeas-1)
InterRATCellInfoIndication ::=
                                       INTEGER (0..3)
    erRATCellInfoList ::= SEQUENCE {
  removedInterRATCellList RemovedInterRATCellList,
InterRATCellInfoList ::=
     -- NOTE: Future revisions of dedicated messages including IE newInterRATCellList
     -- should use a corrected version of this IE
     newInterRATCellList NewInterRATCellList, cellsForInterRATMeasList CellsForInterRATMeasList OPTIONAL
}
InterRATCellInfoList-B ::= SEQUENCE {
   removedInterRATCellList RemovedInterRATCellList,
     -- NOTE: IE newInterRATCellList should be optional. However, system information
     -- does not support message versions. Hence, this can not be corrected
                                        NewInterRATCellList-B
    newInterRATCellList
}
InterRATCellInfoList-r4 ::= SEQUENCE {
    removedInterRATCellList Rem
                                                  RemovedInterRATCellList,
     newInterRATCellList
                                                  NewInterRATCellList
                                                                                           OPTIONAL,
     cellsForInterRATMeasList
                                                  CellsForInterRATMeasList
                                                                                           OPTIONAL
}
InterRATCellInfoList-r6 ::= SEQUENCE {
  removedInterRATCellList Ret
  newInterRATCellList New
  cellsForInterRATMeasList Cell
                                       RemovedInterRATCellList,
                                                 NewInterRATCellList
                                                                                         OPTIONAL,
     cellsForInterRATMeasListCellsForInterRATMeasListOPTIONALinterRATCellInfoIndication-r6InterRATCellInfoIndicationOPTIONAL
                                                  CellsForInterRATMeasList
                                                                                           OPTIONAL,
}
InterRATCellIndividualOffset ::=
                                                 INTEGER (-50..50)
                                     CHOICE {
InterRATEvent ::=
                                              Event3a,
    event3a
     event3b
                                              Event3b,
                                              Event3c,
     event3c
     event3d
                                              Event3d
}
InterRATEventList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                              InterRATEvent
```

```
InterRATEventResults ::=
                                   SEQUENCE {
    eventID
                                       EventIDInterRAT,
                                       CellToReportList
    cellToReportList
InterRATInfo ::=
                                    ENUMERATED {
                                       qsm }
InterRATInfo-r6 ::=
                                    SEQUENCE {
                                       InterRATInfo,
   rat
                                       GSM-TargetCellInfoList OPTIONAL
    gsm-TargetCellInfoList
}
InterRATMeasQuantity ::=
                                       SEQUENCE {
    measQuantityUTRAN-QualityEstimate
                                        {\tt IntraFreqMeasQuantity}
                                                                          OPTIONAL,
                                        CHOICE {
    ratSpecificInfo
                                                SEQUENCE {
        gsm
                                                   MeasurementQuantityGSM,
FilterCoefficient DEFAULT fc0,
           measurementQuantity
            filterCoefficient
            bsic-VerificationRequired
                                                   BSIC-VerificationRequired
        is-2000
                                                SEQUENCE {
            tadd-EcIo
                                                   INTEGER (0..63),
                                                   INTEGER (0..15),
            tcomp-EcIo
            softSlope
                                                   INTEGER (0..63)
                                                                           OPTIONAL,
            addIntercept
                                                   INTEGER (0..63)
                                                                          OPTIONAL
    }
}
InterRATMeasuredResults ::= CHOICE {
                                        GSM-MeasuredResultsList,
    spare
                                       NULL
}
InterRATMeasuredResultsList ::= SEQUENCE (SIZE (1..maxOtherRAT-16)) OF
                                       InterRATMeasuredResults
InterRATMeasurement ::=
                         SEQUENCE {
    InterRATCellInfoList
    InterRATMeasQuantity
                              SEQUENCE {
                                    InterRATMeasQuantity OPTIO
InterRATReportingQuantity OPTIONAL,
InterRATReportCriteria
    interRATCellInfoList
                                                                           OPTIONAL,
                                                                           OPTIONAL,
    interRATMeasQuantity
    interRATReportingQuantity
    reportCriteria
}
InterRATMeasurement-r4 ::=
  interRATCellInfoList
  interRATMeasQuantity
                                 SEQUENCE {
                                  InterRATCellInfoList-r4
                                                                          OPTIONAL,
    interRATMeasQuantity
                                       InterRATMeasQuantity
                                                                           OPTIONAL,
    interRATReportingQuantity
                                       InterRATReportingQuantity OPTIONAL,
    reportCriteria
                                       InterRATReportCriteria
}
InterRATMeasurement-r6 ::= SEQUENCE {
  interRATCellInfoList InterRinterRATMeasQuantity InterRation
                                                                    OPTIONAL,
                                  InterRATCellInfoList-r6
                                       InterRATMeasQuantity
                                                                           OPTIONAL.
                                       InterRATReportingQuantity
                                                                     OPTIONAL,
    interRATReportingQuantity
    reportCriteria
                                       InterRATReportCriteria
}
InterRATMeasurementSysInfo ::= SEQUENCE {
    OPTIONAL
InterRATMeasurementSysInfo-B ::=
                                 SEQUENCE {
   interRATCellInfoList
                                       InterRATCellInfoList-B OPTIONAL
InterRATReportingCriteria,
   periodicalReportingCriteria
                                       PeriodicalWithReportingCellStatus,
                                       ReportingCellStatusOpt
   noReporting
}
{\tt InterRATReportingCriteria ::= SEQUENCE } \big\{
    interRATEventList
                                   InterRATEventList
                                                                   OPTIONAL
}
```

```
InterRATReportingQuantity ::= SEQUENCE {
    utran-EstimatedQuality
                                       BOOLEAN,
    ratSpecificInfo
                                    CHOICE {
                                            SEQUENCE {
        qsm
            -- dummy and dummy2 are not used in this version of the specification
            -- and when received they should be ignored.
                                                BOOLEAN,
                                                BOOLEAN.
            dummy2
            gsm-Carrier-RSSI
                                                BOOLEAN
    }
}
IntraFreqCellID ::=
                                    INTEGER (0..maxCellMeas-1)
                                    SEQUENCE {
IntraFreqCellInfoList ::=
                                       RemovedIntraFreqCellList
    removedIntraFreqCellList
                                                                           OPTIONAL,
    newIntraFreqCellList
                                        NewIntraFreqCellList
                                                                            OPTIONAL.
    cellsForIntraFreqMeasList
                                       CellsForIntraFreqMeasList
}
IntraFreqCellInfoList-r4 ::=
    removedIntraFreqCellList
                                    SEQUENCE {
                                   RemovedIntraFreqCellList
                                                                           OPTIONAL,
    newIntraFreqCellList
                                       NewIntraFreqCellList-r4
                                                                            OPTIONAL
    cellsForIntraFreqMeasList
                                       CellsForIntraFreqMeasList
}
IntraFreqCellInfoSI-List-RSCP ::= SEQUENCE {
                                       RemovedIntraFreqCellList
                                                                            OPTIONAL.
    removedIntraFregCellList
    newIntraFreqCellList
                                       NewIntraFreqCellSI-List-RSCP
IntraFreqCellInfoSI-List-ECN0 ::= SEQUENCE {
    removedIntraFreqCellList
                                       RemovedIntraFreqCellList
                                                                            OPTIONAL,
    newIntraFreqCellList
                                       NewIntraFreqCellSI-List-ECN0
OPTIONAL,
    newIntraFreqCellList
                                       NewIntraFreqCellSI-List-HCS-RSCP
}
IntraFreqCellInfoSI-List-HCS-ECN0 ::= SEQUENCE {
    removedIntraFreqCellList RemovedIntraFreqCellList
    NewIntraFreqCellSI-List-HCS-ECN0
                                                                            OPTIONAL,
}
IntraFreqCellInfoSI-List-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList RemovedIntraFreqCellList newIntraFreqCellList NewIntraFreqCellSI-List-RSCP-LCR-r4
                                                                            OPTIONAL,
    newIntraFreqCellList
}
IntraFreqCellInfoSI-List-ECN0-LCR-r4 ::=
                                               SEQUENCE {
    removedIntraFreqCellList RemovedIntraFreqCellList
                                                                            OPTIONAL.
                                       NewIntraFreqCellSI-List-ECN0-LCR-r4
    newIntraFreqCellList
}
IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4 ::=
                                                   SEQUENCE {
    removedIntraFreqCellList
                                       RemovedIntraFreqCellList
                                                                            OPTIONAL.
                                       NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4
    {\tt newIntraFreqCellList}
IntraFreqCellInfoSI-List-HCS-ECNO-LCR-r4 ::=
                                                  SEOUENCE {
    removedIntraFreqCellList RemovedIntraFreqCellList
                                                                            OPTIONAL.
    {\tt newIntraFreqCellList}
                                       NewIntraFreqCellSI-List-HCS-ECN0-LCR-r4
}
                                    CHOICE {
IntraFreqEvent ::=
    e1a
                                        Event1a,
                                        Event1b,
    e1b
                                        Event1c,
    e1c
                                        NULL,
    e1d
    e1e
                                        Event1e,
    e1f
                                        Event1f,
    e1q
                                        NULL,
                                        ThresholdUsedFrequency,
    e1h
    e1i
                                        ThresholdUsedFrequency
```

```
IntraFreqEvent-r4 ::=
                                    CHOICE {
                                        Event1a-r4,
    e1a
    e1b
                                         Event1b-r4,
    e1c
                                        Event1c,
                                        NULL,
    e1d
    e1e
                                         Event1e,
                                        Event1f,
    e1f
    e1g
                                        NULL,
    e1h
                                         ThresholdUsedFrequency,
                                        ThresholdUsedFrequency
    e1i
}
IntraFreqEvent-LCR-r4 ::=
                                    CHOICE {
    e1a
                                        Eventla-LCR-r4,
    e1b
                                         Event1b-LCR-r4,
    e1c
                                         Event1c,
    e1d
                                        NULL.
                                        Event1e,
    e1e
    e1f
                                         Event1f,
                                        NULL,
    e1q
                                         ThresholdUsedFrequency,
    e1h
    e1i
                                         ThresholdUsedFrequency
}
                                    CHOICE {
IntraFreqEvent-r6 ::=
    e1a
                                         Eventla-r4,
    e1b
                                         Event1b-r4,
   e1c
                                        Event1c,
                                        Event1d,
    e1d
    e1e
                                         Event1e-r6,
    e1f
                                         Event1f-r6,
    e1g
                                         NULL,
                                         ThresholdUsedFrequency-r6,
    e1h
                                        ThresholdUsedFrequency-r6,
    e1i
    e1j
                                         Event1j-r6
}
IntraFreqEvent-r7 ::=
                                    CHOICE {
    e1a
                                         Event1a-r4,
    e1b
                                         Event1b-r7,
                                        Event1c,
    e1c
    e1d
                                        Event1d,
    e1e
                                        Eventle-r6,
   e1f
                                         Event1f-r6,
    e1g
                                         NULL,
                                         ThresholdUsedFrequency-r6,
    e1h
    e1i
                                         ThresholdUsedFrequency-r6,
    e1j
                                         Event1j-r6
}
IntraFreqEvent-1d-r5 ::=
                                SEQUENCE {
    triggeringCondition
                                        TriggeringCondition2 OPTIONAL,
                                        BOOLEAN
                                                                 OPTIONAL
}
IntraFreqEventCriteria ::=
                                   SEQUENCE {
                                     IntraFreqEvent,
    hysteresis
                                        Hysteresis,
    timeToTrigger
                                        TimeToTrigger,
    reportingCellStatus
                                        ReportingCellStatus
                                                                             OPTIONAL
                                    SEQUENCE {
IntraFreqEventCriteria-r4 ::=
                                        IntraFreqEvent-r4,
    event.
    hysteresis
                                         Hysteresis,
    timeToTrigger
                                         TimeToTrigger,
    reportingCellStatus
                                        ReportingCellStatus
                                                                             OPTIONAL
}
IntraFreqEventCriteria-LCR-r4 ::= SEQUENCE {
    event
                                        IntraFreqEvent-LCR-r4,
    hvsteresis
                                        Hysteresis,
    timeToTrigger
                                        TimeToTrigger,
    reportingCellStatus
                                        ReportingCellStatus
                                                                            OPTIONAL
}
IntraFreqEventCriteria-r6 ::= SEQUENCE {
```

```
event
                                                                          IntraFreqEvent-r6,
       hysteresis
                                                                          Hysteresis,
       timeToTrigger
                                                                          TimeToTrigger,
                                                                                                                                              OPTIONAL
       reportingCellStatus
                                                                          ReportingCellStatus
IntraFreqEventCriteria-r7 ::= SEQUENCE {
                                                                           IntraFreqEvent-r7,
       event.
       hysteresis
                                                                          Hysteresis,
       timeToTrigger
                                                                           TimeToTrigger,
                                                                          ReportingCellStatus
       reportingCellStatus
                                                                                                                                            OPTIONAL
IntraFreqEventCriteriaList ::=
                                                                SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                                                          IntraFreqEventCriteria
IntraFreqEventCriteriaList-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                                                           IntraFreqEventCriteria-r4
                                                                           SEQUENCE (SIZE (1..maxMeasEvent)) OF
IntraFregEventCriteriaList-LCR-r4 ::=
                                                                           IntraFreqEventCriteria-LCR-r4
                                                                           SEQUENCE (SIZE (1..maxMeasEvent)) OF
IntraFreqEventCriteriaList-r6 ::=
                                                                           IntraFreqEventCriteria-r6
IntraFreqEventCriteriaList-r7 ::=
                                                                           SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                                                          IntraFreqEventCriteria-r7
                                                                SEQUENCE {
IntraFreqEventResults ::=
                                                                           EventIDIntraFreq,
       event.ID
       cellMeasurementEventResults
                                                                           CellMeasurementEventResults
}
IntraFreqMeasQuantity ::=
                                                                   SEQUENCE {
       filterCoefficient
                                                                          FilterCoefficient
                                                                                                                                           DEFAULT fc0,
                                                                           CHOICE {
       modeSpecificInfo
                                                                           SEQUENCE {
              fdd
                      intraFreqMeasQuantity-FDD
                                                                                  IntraFreqMeasQuantity-FDD
                                                                           SEQUENCE {
                      intraFreqMeasQuantity-TDDList
                                                                                 IntraFreqMeasQuantity-TDDList
       }
}
-- If IntraFreqMeasQuantity-FDD is used in InterRATMeasQuantity, then only
-- cpich-Ec-N0 and cpich-RSCP are allowed.
-- dummy is not used in this version of the specification, it should
-- not be sent and if received the UE behaviour is not specified.
IntraFreqMeasQuantity-FDD ::=
                                                                ENUMERATED {
                                                                           cpich-Ec-N0,
                                                                           cpich-RSCP,
                                                                           pathloss,
IntraFreqMeasQuantity-FDD-sib3 ::= ENUMERATED {
                                                                          cpich-Ec-N0, cpich-RSCP }
-- dummy is not used in this version of the specification, it should
-- not be sent and if received the UE behaviour is not specified.
IntraFreqMeasQuantity-TDD ::=
                                                                   ENUMERATED {
                                                                          primaryCCPCH-RSCP,
                                                                           pathloss,
                                                                           timeslotISCP,
                                                                           dummy }
IntraFreqMeasQuantity-TDDList ::= SEQUENCE (SIZE (1..4)) OF
                                                                          IntraFreqMeasQuantity-TDD
IntraFreqMeasQuantity-TDD-sib3List ::= SEQUENCE (SIZE (1..2)) OF
                                                                          ENUMERATED { primaryCCPCH-RSCP, timeslotISCP }
\label{eq:continuous}  \mbox{IntraFreqMeasuredResultsList} ::= \qquad \mbox{SEQUENCE (SIZE (1..maxCellMeas)) OF} 
                                                                         CellMeasuredResults
\label{eq:continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous
                                                                                                                   DEFAULT 1,
       intraFreqMeasurementID
                                                                          MeasurementIdentity
       intraFreqCellInfoSI-List
                                                                          IntraFreqCellInfoSI-List-RSCP OPTIONAL,
```

```
intraFreqMeasQuantity
                                        IntraFreqMeasQuantity
                                                                            OPTIONAL,
                                        IntraFreqReportingQuantityForRACH
    intraFreqReportingQuantityForRACH
                                                                           OPTIONAL,
   maxReportedCellsOnRACH
                                        MaxReportedCellsOnRACH
                                                                            OPTIONAL,
   reportingInfoForCellDCH
                                        ReportingInfoForCellDCH
                                                                            OPTIONAL
IntraFreqMeasurementSysInfo-ECN0 ::=
                                            SEOUENCE {
   intraFreqMeasurementID
                                        MeasurementIdentity
                                                                   DEFAULT 1,
                                        IntraFreqCellInfoSI-List-ECN0
   intraFreqCellInfoSI-List
                                                                            OPTIONAL,
    intraFreqMeasQuantity
                                        IntraFreqMeasQuantity
                                                                            OPTIONAL,
   \verb|intraFreqReportingQuantityForRACH| \\
                                        IntraFreqReportingQuantityForRACH
                                                                            OPTIONAL,
                                        MaxReportedCellsOnRACH
   maxReportedCellsOnRACH
                                                                            OPTIONAL,
                                        ReportingInfoForCellDCH
   reportingInfoForCellDCH
                                                                            OPTIONAL.
}
IntraFreqMeasurementSysInfo-HCS-RSCP ::=
                                           SEQUENCE {
                                        MeasurementIdentity
    intraFreqMeasurementID
                                                                    DEFAULT 1.
   intraFreqCellInfoSI-List
                                        IntraFreqCellInfoSI-List-HCS-RSCP OPTIONAL,
   intraFreqMeasQuantity
                                        IntraFreqMeasQuantity
                                                                            OPTIONAL.
   intraFreqReportingQuantityForRACH
                                        IntraFreqReportingQuantityForRACH
                                                                           OPTIONAL,
   maxReportedCellsOnRACH
                                        MaxReportedCellsOnRACH
                                                                            OPTIONAL,
   reportingInfoForCellDCH
                                        ReportingInfoForCellDCH
                                                                            OPTIONAL
}
IntraFreqMeasurementSysInfo-HCS-ECN0 ::=
                                           SECUENCE {
                                                                    DEFAULT 1.
   intraFreqMeasurementID
                                       MeasurementIdentity
   intraFreqCellInfoSI-List
                                       IntraFreqCellInfoSI-List-HCS-ECN0 OPTIONAL,
    intraFreqMeasQuantity
                                        IntraFreqMeasQuantity
                                                                            OPTIONAL,
   intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH OPTIONAL,
   maxReportedCellsOnRACH
                                        MaxReportedCellsOnRACH
                                                                            OPTIONAL.
   reportingInfoForCellDCH
                                        ReportingInfoForCellDCH
                                                                            OPTIONAL
IntraFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
                                       MeasurementIdentity
   intraFreqMeasurementID
                                                                    DEFAULT 1,
    intraFreqCellInfoSI-List
                                        IntraFreqCellInfoSI-List-RSCP-LCR-r4
                                                                                 OPTIONAL,
                                                                            OPTIONAL,
   intraFreqMeasQuantity
                                        IntraFreqMeasQuantity
                                       IntraFreqReportingQuantityForRACH
   intraFreqReportingQuantityForRACH
                                                                            OPTIONAL,
   maxReportedCellsOnRACH
                                        MaxReportedCellsOnRACH
                                                                            OPTIONAL.
   reportingInfoForCellDCH
                                        ReportingInfoForCellDCH-LCR-r4
                                                                            OPTIONAL
                                                SEQUENCE {
IntraFreqMeasurementSysInfo-ECN0-LCR-r4 ::=
    intraFreqMeasurementID
                                        MeasurementIdentity
                                                                    DEFAULT 1,
    intraFreqCellInfoSI-List
                                        IntraFreqCellInfoSI-List-ECN0-LCR-r4
                                                                                 OPTIONAL,
   intraFreqMeasQuantity
                                        IntraFreqMeasQuantity
                                                                            OPTIONAL,
   \verb|intraFreqReportingQuantityForRACH| \\
                                        {\tt IntraFreqReportingQuantityForRACH}
                                                                            OPTIONAL.
                                        {\tt MaxReportedCellsOnRACH}
   maxReportedCellsOnRACH
                                                                            OPTIONAL,
   reportingInfoForCellDCH
                                        ReportingInfoForCellDCH-LCR-r4
                                                                            OPTIONAL
}
IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID
                                        MeasurementIdentity
                                                                    DEFAULT 1,
    intraFreqCellInfoSI-List
                                        IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4
                                                                            OPTIONAL,
   intraFreqMeasQuantity
                                        IntraFreqMeasQuantity
   intraFreqReportingQuantityForRACH
                                       IntraFreqReportingQuantityForRACH
                                                                           OPTIONAL.
   maxReportedCellsOnRACH
                                        MaxReportedCellsOnRACH
                                                                            OPTIONAL.
   reportingInfoForCellDCH
                                        ReportingInfoForCellDCH-LCR-r4
                                                                            OPTIONAL
IntraFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    \verb"intraFreqMeasurementID"
                                        MeasurementIdentity
                                                                    DEFAULT 1,
                                        IntraFreqCellInfoSI-List-HCS-ECN0-LCR-r4
   intraFreqCellInfoSI-List
                                                                                    OPTIONAL,
                                        IntraFreqMeasQuantity
    intraFreqMeasQuantity
                                                                            OPTIONAL.
                                      IntraFreqReportingQuantityForRACH
   intraFreqReportingQuantityForRACH
                                                                            OPTIONAL,
                                                                            OPTIONAL,
   maxReportedCellsOnRACH
                                        MaxReportedCellsOnRACH
   reportingInfoForCellDCH
                                        ReportingInfoForCellDCH-LCR-r4
                                                                            OPTIONAL
}
IntraFreqReportCriteria ::=
                                    CHOICE {
   intraFreqReportingCriteria
                                        IntraFreqReportingCriteria,
   periodicalReportingCriteria
                                        PeriodicalWithReportingCellStatus,
                                        ReportingCellStatusOpt
   noReporting
}
IntraFreqReportCriteria-r4 ::=
                                    CHOICE {
   intraFreqReportingCriteria
                                        IntraFreqReportingCriteria-r4,
   periodicalReportingCriteria
                                        PeriodicalWithReportingCellStatus,
```

```
noReporting
                                         ReportingCellStatusOpt
}
IntraFreqReportCriteria-r6 ::=
                                    CHOICE {
    intraFreqReportingCriteria
                                        IntraFreqReportingCriteria-r6,
    periodicalReportingCriteria
                                         PeriodicalWithReportingCellStatus,
                                        ReportingCellStatusOpt
    noReporting
}
IntraFreqReportCriteria-r7 ::=
                                    CHOICE {
    intraFreqReportingCriteria
                                     IntraFreqReportingCriteria-r7,
    periodicalReportingCriteria
                                         PeriodicalWithReportingCellStatus,
    noReporting
                                        ReportingCellStatusOpt
}
                                    SEQUENCE {
IntraFreqReportingCriteria ::=
    eventCriteriaList
                                        IntraFreqEventCriteriaList
                                                                        OPTIONAL
IntraFreqReportingCriteria-r4 ::= SEQUENCE {
    eventCriteriaList
                                        IntraFreqEventCriteriaList-r4 OPTIONAL
IntraFreqReportingCriteria-LCR-r4 ::= SEQUENCE {
                                        IntraFregEventCriteriaList-LCR-r4 OPTIONAL
    eventCriteriaList
IntraFreqReportingCriteria-r6 ::= SEQUENCE {
    eventCriteriaList
                                        IntraFreqEventCriteriaList-r6 OPTIONAL
}
IntraFreqReportingCriteria-r7 ::= SEQUENCE {
    eventCriteriaList
                                        IntraFreqEventCriteriaList-r7 OPTIONAL
   activeSetReportingQuantities CellPermonitoredSetPoperr'
IntraFreqReportingQuantity ::=
                                    CellReportingQuantities,
    monitoredSetReportingQuantities detectedSetReportingQuantities CellReportingQuantities
                                        CellReportingQuantities,
                                                                            OPTIONAL
}
\label{eq:contingQuantityForRACH} \textbf{IntraFreqReportingQuantityForRACH} \ ::= \ \textbf{SEQUENCE} \ \big\{
                                         SFN-SFN-OTD-Type,
    sfn-SFN-OTD-Type
    modeSpecificInfo
                                         CHOICE {
                                            SEQUENCE {
            intraFreqRepQuantityRACH-FDD
                                                IntraFreqRepQuantityRACH-FDD
        tdd
                                            SEQUENCE {
            intraFreqRepQuantityRACH-TDDList IntraFreqRepQuantityRACH-TDDList
        }
    }
}
IntraFreqRepQuantityRACH-FDD ::=
                                    ENUMERATED {
                                        cpich-EcNO, cpich-RSCP,
                                         pathloss, noReport }
IntraFreqRepQuantityRACH-TDD ::=
                                     ENUMERATED {
                                        timeslotISCP,
                                         primaryCCPCH-RSCP,
                                        noReport }
IntraFreqRepQuantityRACH-TDDList ::= SEQUENCE (SIZE (1..2)) OF
                                        IntraFreqRepQuantityRACH-TDD
IntraFrequencyMeasurement ::=
                                    SEQUENCE {
                                        IntraFreqCellInfoList
    intraFreqCellInfoList
                                                                             OPTIONAL,
    intraFreqMeasQuantity
                                        IntraFreqMeasQuantity
                                                                             OPTIONAL,
    \verb"intraFreqReportingQuantity"
                                        IntraFreqReportingQuantity
                                                                             OPTIONAL.
    measurementValidity
                                        MeasurementValidity
                                                                             OPTIONAL,
    reportCriteria
                                        IntraFreqReportCriteria
                                                                             OPTIONAL
                                  SEQUENCE {
IntraFrequencyMeasurement-r4 ::=
    intraFreqCellInfoList
                                  IntraFreqCellInfoList-r4
                                                                            OPTIONAL,
                                        IntraFreqMeasQuantity
    intraFreqMeasQuantity
                                                                            OPTIONAL,
    intraFreqReportingQuantity
                                        IntraFreqReportingQuantity
                                                                             OPTIONAL,
    measurement Validity
                                        MeasurementValidity
                                                                             OPTIONAL,
```

```
reportCriteria
                                         IntraFreqReportCriteria-r4
                                                                               OPTIONAL
}
IntraFrequencyMeasurement-r6 ::= SEQUENCE {
   intraFreqCellInfoList IntraFreqCellInfoList-r4 OPTIONAL,
   intraFreqMeasQuantity IntraFreqMeasQuantity OPTIONAL,
   intraFreqReportingQuantity IntraFreqReportingQuantity OPTIONAL,
   measurementValidity MeasurementValidity OPTIONAL,
    -- reportCriteria is optional in later versions of this message
    reportCriteria
                                         IntraFreqReportCriteria-r6
}
}
                                     INTEGER (0..255)
IODE ::=
IP-Length ::=
                                      ENUMERATED {
                                          ip15, ip110 }
IP-PCCPCH-r4 ::=
                                      BOOLEAN
                                      ENUMERATED {
IP-Spacing ::=
                                         e5, e7, e10, e15, e20,
                                         e30, e40, e50 }
IP-Spacing-TDD ::=
                                         ENUMERATED {
                                         e30, e40, e50, e70, e100}
IS-2000SpecificMeasInfo ::= ENUMERATED {
                                          frequency, timeslot, colourcode,
                                          outputpower, pn-Offset }
KeplerianParameters ::= SEQUENCE {
                                     BIT STRING (SIZE (14)),
   toe-nav
    ganss-omega-nav
                                          BIT STRING (SIZE (32)),
                                         BIT STRING (SIZE (16)),
    delta-n-nav
                                        BIT STRING (SIZE (32)),
BIT STRING (SIZE (24)),
   m-zero-nav
    omegadot-nav
    ganss-e-lsb-nav
                                        BIT STRING (SIZE (32)),
                                        BIT STRING (SIZE (14)),
BIT STRING (SIZE (32)),
    idot-nav
    a-sgrt-nav
    i-zero-nav
                                        BIT STRING (SIZE (32)),
    omega-zero-nav
                                         BIT STRING (SIZE (32)),
                                        BIT STRING (SIZE (16)),
    c-rs-nav
    c-is-nav
                                         BIT STRING (SIZE (16)),
                                         BIT STRING (SIZE (16)),
    c-us-nav
                                         BIT STRING (SIZE (16)),
    c-rc-nav
                                          BIT STRING (SIZE (16)),
    c-ic-nav
                                         BIT STRING (SIZE (16))
    c-uc-nav
}
MaxNumberOfReportingCellsType1 ::= ENUMERATED {
                                          e1, e2, e3, e4, e5, e6}
MaxNumberOfReportingCellsType2 ::= ENUMERATED {
                                          e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11, e12}
MaxNumberOfReportingCellsType3 ::= ENUMERATED {
                                          viactCellsPlus1,
                                          viactCellsPlus2,
                                          viactCellsPlus3,
                                          viactCellsPlus4,
                                          viactCellsPlus5,
                                          viactCellsPlus6 }
MaxReportedCellsOnRACH ::=
                                    ENUMERATED {
                                         noReport,
                                          currentCell,
                                          currentAnd-1-BestNeighbour,
                                          currentAnd-2-BestNeighbour,
                                          currentAnd-3-BestNeighbour.
                                          currentAnd-4-BestNeighbour,
```

```
currentAnd-5-BestNeighbour,
                                         currentAnd-6-BestNeighbour }
                                        INTEGER (1..8)
MaxReportedCellsOnRACHinterFreq ::=
MeasuredResults ::=
                                     CHOICE {
    intraFreqMeasuredResultsList
                                         IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList
                                         InterFreqMeasuredResultsList,
    interRATMeasuredResultsList
                                         InterRATMeasuredResultsList,
    {\tt trafficVolumeMeasuredResultsList}
                                         TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults
                                         QualityMeasuredResults,
                                         UE-InternalMeasuredResults,
    ue-InternalMeasuredResults
    ue-positioning-MeasuredResults
                                        UE-Positioning-MeasuredResults,
                                         NULL
    spare
}
MeasuredResults-v390ext ::=
                                             SEOUENCE {
    ue-positioning-MeasuredResults-v390ext
                                                             UE-Positioning-MeasuredResults-v390ext
MeasuredResults-v590ext ::= CHOICE {
    \verb|intraFrequencyMeasuredResultsList|
                                             IntraFrequencyMeasuredResultsList-v590ext,
    interFrequencyMeasuredResultsList
                                             InterFrequencyMeasuredResultsList-v590ext
}
MeasuredResults-v770ext ::= CHOICE {
                                             UE-InternalMeasuredResults-v770ext,
    ueInternalMeasuredResults
    ue-positioning-MeasuredResults
                                             UE-Positioning-MeasuredResults-v770ext
}
MeasuredResults-LCR-r4 ::=
                                    CHOICE {
    intraFreqMeasuredResultsList
                                         IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList
                                         InterFreqMeasuredResultsList,
    interRATMeasuredResultsList
                                         InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList
                                         TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults
                                         QualityMeasuredResults,
    ue-InternalMeasuredResults
                                         UE-InternalMeasuredResults-LCR-r4,
    ue-positioniing-MeasuredResults
                                        UE-Positioning-MeasuredResults,
                                        NULL
    spare
                                     SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
MeasuredResultsList ::=
                                         MeasuredResults
MeasuredResultsList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                         MeasuredResults-LCR-r4
MeasuredResultsList-v770xet ::=
                                    SEQUENCE (SIZE (1..maxAdditionalMeas)) OF SEQUENCE {
   -- The 'measuredResults' element shall be present, if 'v770' extended measurement results
    -- associated with the corresponding element in the IE 'MeasuredResultList' shall be
    \mbox{--}\mbox{provided, otherwise it is not needed}
    measuredResults
                                        MeasuredResults-v770ext
                                                                                  OPTIONAL
MeasuredResultsOnRACH ::=
                                    SEQUENCE {
    currentCell
                                         SEQUENCE {
        modeSpecificInfo
                                            CHOICE {
            fdd
                                                 SEQUENCE {
                measurementQuantity
                                                     CHOICE {
                    cpich-Ec-N0
                                                         CPICH-Ec-NO,
                                                         CPICH-RSCP,
                    cpich-RSCP
                    pathloss
                                                         Pathloss,
                                                         NULL
                    spare
                }
            tdd
                                                 SEQUENCE {
                 -- For 3.84 Mcps, 7.68 Mcps and 1.28 Mcps TDD
                timeslotISCP
                                                     TimeslotISCP-List
                                                                             OPTIONAL.
                primaryCCPCH-RSCP
                                                     PrimaryCCPCH-RSCP
                                                                              OPTIONAL
            }
    },
    monitoredCells
                                        MonitoredCellRACH-List
                                                                            OPTIONAL
}
MeasuredResultsOnRACH-v7g0ext ::=
                                    SEQUENCE {
        currentCell-DeltaRSCP
                                            DeltaRSCPPerCell
                                                                                  OPTIONAL,
```

```
monitoredCellRACH-List-v7g0ext MonitoredCellRACH-List-v7g0ext
                                                                            OPTIONAL
}
--The order of the list corresponds to the order of the cells in MonitoredCellRACH-List
\label{eq:monitoredCellrach-List-v7g0ext} \mbox{ ::= SEQUENCE (SIZE (1..8)) OF}
                                              DeltaRSCPPerCell
MeasuredResultsOnRACHinterFreq ::=
                                      SEQUENCE {
   interFreqCellIndication-SIB11
                                      INTEGER (0..1),
    interFreqCellIndication-SIB12
                                           INTEGER (0..1),
                                          InterFreqRACHRepCellsList
   interFreqRACHRepCellsList
}
MeasurementCommand ::=
                                  CHOICE {
   setup
                                      MeasurementType,
                                       SEQUENCE {
   modify
       measurementType
                                          MeasurementType
                                                                        OPTIONAL
                                      NULL
   release
}
                                  CHOICE {
MeasurementCommand-r4 ::=
                                       MeasurementType-r4,
                                       SEQUENCE {
   modify
                                          MeasurementType-r4
                                                                        OPTIONAL
       measurementType
   release
                                      NULL
}
MeasurementCommand-r6 ::=
                                CHOICE {
   setup
                                       MeasurementType-r6,
                                       SEQUENCE {
       measurementType
                                          MeasurementType-r6
                                                                OPTIONAL
                                      NULL
   release
}
MeasurementCommand-r7 ::= CHOICE {
   setup
                                      MeasurementType-r7,
   modify
                                       SEQUENCE {
      measurementType
                                          MeasurementType-r7
                                                                        OPTIONAL
                                      NULL
   release
}
MeasurementControlSysInfo ::=
                                 SEQUENCE {
    -- CHOICE cellSelectQualityMeasure represents PCCPCH-RSCP in TDD mode.
                                      CHOICE {
   use-of-HCS
       hcs-not-used
                                      SEQUENCE
           cellSelectQualityMeasure CHOICE {
              cpich-RSCP
                                      SEQUENCE
                   intraFreqMeasurementSysInfo
                                                      IntraFreqMeasurementSysInfo-RSCP
   OPTIONAL,
                   interFreqMeasurementSysInfo
                                                      InterFreqMeasurementSysInfo-RSCP
               },
               cpich-Ec-N0
                                      SEOUENCE
                   intraFreqMeasurementSysInfo
                                                      IntraFreqMeasurementSysInfo-ECN0
   OPTIONAL,
                   interFreqMeasurementSysInfo
                                                      InterFreqMeasurementSysInfo-ECN0
                                                                                         OPTIONAL
           interRATMeasurementSysInfo
                                         InterRATMeasurementSysInfo-B
                                                                            OPTIONAL
       },
       hcs-used
                                      SEQUENCE
                                                  {
           {\tt cellSelectQualityMeasure}
                                      CHOICE {
               cpich-RSCP
                                      SEQUENCE
                   intraFreqMeasurementSysInfo
                                                      IntraFreqMeasurementSysInfo-HCS-RSCP
   OPTIONAL,
                   interFreqMeasurementSysInfo
                                                      InterFreqMeasurementSysInfo-HCS-RSCP
   OPTIONAL
               cpich-Ec-N0
                                      SEQUENCE
                                                      IntraFreqMeasurementSysInfo-HCS-ECN0
                   intraFreqMeasurementSysInfo
   OPTIONAL,
                   interFreqMeasurementSysInfo
                                                      InterFreqMeasurementSysInfo-HCS-ECN0
   OPTIONAL
               }
           },
```

```
OPTIONAL
    },
    trafficVolumeMeasSysInfo
                                       TrafficVolumeMeasSysInfo
                                                                          OPTIONAL,
    -- dummy is not used in this version of specification and it shall be ignored by the UE.
               UE-InternalMeasurementSysInfo
                                                   OPTIONAL
}
MeasurementControlSysInfoExtension ::= SEQUENCE {
    -- CHOICE cellSelectQualityMeasure represents PCCPCH-RSCP in TDD mode.
                                  CHOICE {
    use-of-HCS
       hcs-not-used
                                       SEOUENCE {
           cellSelectQualityMeasure
                                          CHOICE {
               cpich-RSCP
                                             SEOUENCE {
                   newIntraFreqCellList
                                                 NewIntraFreqCellSI-List-RSCP
                                                   NewInterFreqCellSI-List-RSCP
                   newInterFreqCellList
                                                                                   OPTIONAL
                                               SEQUENCE {
               cpich-Ec-N0
                   newIntraFreqCellList
newInterFreqCellList
                                                  NewIntraFreqCellSI-List-ECN0
                                                                                   OPTIONAL.
                                                   NewInterFreqCellSI-List-ECN0
                                                                                   OPTIONAL
           newInterRATCellList
                                         NewInterRATCellList
                                                                         OPTIONAL
                                      SEQUENCE {
       hcs-used
           cellSelectQualityMeasure
                                       CHOICE {
                                               SEQUENCE {
               cpich-RSCP
                   newIntraFregCellList
                                                  NewIntraFreqCellSI-List-HCS-RSCP
                                                                                       OPTIONAL.
                                                  NewInterFreqCellSI-List-HCS-RSCP
                   newInterFreqCellList
                                                                                       OPTIONAL.
               cpich-Ec-N0
                                               SEQUENCE {
                   newIntraFreqCellList
newInterFreqCellList
                                                   NewIntraFreqCellSI-List-HCS-ECN0
                                                                                       OPTIONAL,
                                                   NewInterFreqCellSI-List-HCS-ECN0
                                                                                       OPTIONAL
           newInterRATCellList
                                         NewInterRATCellList
        }
    }
}
MeasurementControlSysInfoExtensionAddon-r5 ::= SEQUENCE {
   --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList newIntraFrequencyCellInfoListAddon-r5 SEQUENCE (SIZE (1..maxCellMeas)) OF
                                              CellSelectReselectInfo-v590ext OPTIONAL,
    -- The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
   newInterFrequencyCellInfoListAddon-r5 SEQUENCE (SIZE (1..maxCellMeas)) OF
                                               CellSelectReselectInfo-v590ext OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterRATCellInfoList
   newInterRATCellInfoListAddon-r5
                                           SEQUENCE (SIZE (1..maxCellMeas)) OF
                                               CellSelectReselectInfo-v590ext OPTIONAL
}
MeasurementControlSysInfoExtension-LCR-r4 ::= SEQUENCE {
    -- CHOICE cellSelectQualityMeasure represents PCCPCH-RSCP in TDD mode.
    use-of-HCS
                        CHOICE {
       hcs-not-used
                                 SEQUENCE {
           cellSelectQualityMeasure CHOICE {
               cpich-RSCP
                                           SEQUENCE {
                                               NewIntraFreqCellSI-List-RSCP-LCR-r4 OPTIONAL,
                   newIntraFreqCellList
                                               NewInterFreqCellSI-List-RSCP-LCR-r4 OPTIONAL
                   newInterFreqCellList
                                           SEQUENCE {
               cpich-Ec-N0
                                          NewIntraFreqCellSI-List-ECN0-LCR-r4 OPTIONAL,
                   newIntraFreqCellList
                                               NewInterFreqCellSI-List-ECNO-LCR-r4 OPTIONAL
                   newInterFreqCellList
           },
           newInterRATCellList NewInterRATCellList
                                                                           OPTIONAL
        },
                                 SEQUENCE {
        hcs-used
            cellSelectQualityMeasure CHOICE {
               cpich-RSCP
                                           SEQUENCE {
                                              NewIntraFregCellSI-List-HCS-RSCP-LCR-r4 OPTIONAL,
                   newIntraFregCellList
                   newInterFreqCellList
                                               NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 OPTIONAL
               cpich-Ec-N0
                                           SEQUENCE {
                   newIntraFregCellList
                                               NewIntraFregCellSI-List-HCS-ECN0-LCR-r4 OPTIONAL,
                                               NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 OPTIONAL
                   newInterFreqCellList
```

```
}.
          newInterRATCellList
                                   NewInterRATCellList
                                                                     OPTIONAL
       }
   }
}
MeasurementControlSysInfo-LCR-r4-ext ::= SEQUENCE {
    -- CHOICE use-of-HCS shall have the same value as the use-of-HCS
   -- in MeasurementControlSysInfo
   -- CHOICE cellSelectQualityMeasure represents PCCPCH-RSCP in TDD mode.
                                    CHOICE {
   use-of-HCS
       hcs-not-used
                                    SEOUENCE
           -- CHOICE cellSelectQualityMeasure shall have the same value as the
           -- cellSelectQualityMeasure in MeasurementControlSysInfo
           cellSelectQualityMeasure CHOICE {
                                    SEOUENCE
              cpich-RSCP
                  intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL,
                  {\tt interFreqMeasurementSysInfo-RSCP-LCR-r4~OPTIONAL}
              },
              cpich-Ec-N0
                                    SEQUENCE
                  intra \texttt{FreqMeasurementSysInfo-ECN0-LCR-r4} \ \ \texttt{OPTIONAL},
                  }
                                    SEQUENCE
           -- CHOICE cellSelectQualityMeasure shall have the same value as the
           -- cellSelectQualityMeasure in MeasurementControlSysInfo
           cellSelectQualityMeasure CHOICE {
              cpich-RSCP
                                    SEQUENCE
                  intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4
   OPTIONAL,
                  interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 OPTIONAL
              cpich-Ec-N0
                                    SEQUENCE
                  intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-ECN0-LCR-r4
   OPTIONAL,
                  }
       }
MeasurementIdentity ::=
                        INTEGER (1..16)
MeasurementQuantityGSM ::=
                                 ENUMERATED {
                                    gsm-CarrierRSSI,
                                    dummy }
MeasurementReportingMode ::=
                                 SEQUENCE {
                                 TransferMode,
   measurementReportTransferMode
   periodicalOrEventTrigger
                                    PeriodicalOrEventTrigger
}
MeasurementType ::=
                                 CHOICE {
   intraFrequencyMeasurement
                                 IntraFrequencyMeasurement,
   interFrequencyMeasurement
                                    InterFrequencyMeasurement,
                                    InterRATMeasurement,
   interRATMeasurement
   ue-positioning-Measurement
                                   UE-Positioning-Measurement,
   trafficVolumeMeasurement
                                    TrafficVolumeMeasurement,
   {\tt qualityMeasurement}
                                    OualityMeasurement,
   ue-InternalMeasurement
                                    UE-InternalMeasurement
MeasurementType-r4 ::=
                                 CHOICE {
                                 IntraFrequencyMeasurement-r4,
   \verb"intraFrequency Measurement"
   interFrequencyMeasurement
                                    InterFrequencyMeasurement-r4,
   interRATMeasurement
                                    InterRATMeasurement-r4,
                                    UE-Positioning-Measurement-r4,
   up-Measurement
   trafficVolumeMeasurement
                                    TrafficVolumeMeasurement,
   qualityMeasurement
                                    QualityMeasurement,
   ue-InternalMeasurement
                                    UE-InternalMeasurement-r4
}
                                CHOICE {
MeasurementType-r6 ::=
   intraFrequencyMeasurement
                                    IntraFrequencyMeasurement-r6,
```

```
interFrequencyMeasurement
                                       InterFrequencyMeasurement-r6,
    interRATMeasurement
                                        InterRATMeasurement-r6,
   up-Measurement
                                       UE-Positioning-Measurement-r4,
                                       TrafficVolumeMeasurement,
    trafficVolumeMeasurement
    qualityMeasurement
                                        QualityMeasurement,
    ue-InternalMeasurement
                                       UE-InternalMeasurement-r4
}
                                   CHOICE {
MeasurementType-r7 ::=
                                   IntraFrequencyMeasurement-r7,
    intraFrequencyMeasurement
                                       InterFrequencyMeasurement-r7,
    interFrequencyMeasurement
    interRATMeasurement
                                       InterRATMeasurement-r6,
UE-Positioning-Measurement-r7,
   up-Measurement
    trafficVolumeMeasurement
                                       TrafficVolumeMeasurement,
    qualityMeasurement
                                        QualityMeasurement,
    ue-InternalMeasurement
                                       UE-InternalMeasurement-r4
}
MeasurementValidity ::=
                                   SEQUENCE {
   ue-State
                                        ENUMERATED {
                                            cell-DCH, all-But-Cell-DCH, all-States }
}
                                    SEQUENCE (SIZE (1..8)) OF
MonitoredCellRACH-List ::=
                                       MonitoredCellRACH-Result
MonitoredCellRACH-Result ::=
                                    SEQUENCE {
                                   SFN-SFN-ObsTimeDifference
    sfn-SFN-ObsTimeDifference
                                                                          OPTIONAL,
    modeSpecificInfo
                                       CHOICE {
        fdd
                                            SEQUENCE {
           primaryCPICH-Info
                                                PrimaryCPICH-Info,
            measurementQuantity
                                                CHOICE {
                cpich-Ec-N0
                                                    CPICH-Ec-NO,
                cpich-RSCP
                                                    CPICH-RSCP,
               pathloss
                                                    Pathloss,
                spare
                                                    NULL.
            }
                                                                            OPTIONAL
        },
        t dd
                                            SEQUENCE {
            cellParametersID
                                               CellParametersID,
           primaryCCPCH-RSCP
                                                PrimaryCCPCH-RSCP
        }
    }
}
MultipathIndicator ::=
                                    ENUMERATED {
                                       nm,
                                        low
                                        medium,
                                       high }
N-CR-T-CRMaxHyst ::=
                                    SEOUENCE {
   n-CR
                                       INTEGER (1..16)
                                                                           DEFAULT 8,
    t-CRMaxHyst
                                        T-CRMaxHyst
}
NavigationModelSatInfo ::=
                                    SEQUENCE {
                                      SatID,
   satID
    satelliteStatus
                                        SatelliteStatus,
                                       EphemerisParameter OPTIONAL
    ephemerisParameter
}
NavigationModelSatInfoList ::=
                                   SEQUENCE (SIZE (1..maxSat)) OF
                                        NavigationModelSatInfo
EphemerisParameter ::=
                                            SEQUENCE {
    codeOnL2
                                        BIT STRING (SIZE (2)),
   uraIndex
                                        BIT STRING (SIZE (4)),
                                        BIT STRING (SIZE (6)),
    satHealth
                                        BIT STRING (SIZE (10)),
    iodc
    12Pflag
                                       BIT STRING (SIZE (1)),
    sf1Revd
                                        SubFrame1Reserved,
                                       BIT STRING (SIZE (8)),
   t-GD
                                       BIT STRING (SIZE (16)),
    t-oc
   af2
                                        BIT STRING (SIZE (8)),
    af1
                                       BIT STRING (SIZE (16)),
    af0
                                        BIT STRING (SIZE (22)).
                                        BIT STRING (SIZE (16)),
    c-rs
```

```
delta-n
                                         BIT STRING (SIZE (16)),
                                         BIT STRING (SIZE (32)),
    m0
                                        BIT STRING (SIZE (16)),
    c-uc
                                        BIT STRING (SIZE (32)),
    е
    c-us
                                        BIT STRING (SIZE (16)),
                                        BIT STRING (SIZE (32)),
    a-Sqrt
                                        BIT STRING (SIZE (16)),
    t.-oe
                                        BIT STRING (SIZE (1)),
    fitInterval
    aodo
                                        BIT STRING (SIZE (5)),
    c-ic
                                        BIT STRING (SIZE (16)),
                                        BIT STRING (SIZE (32)),
   omega0
                                        BIT STRING (SIZE (16)),
    c-is
                                        BIT STRING (SIZE (32)),
    iΟ
    c-rc
                                        BIT STRING (SIZE (16)),
    omega
                                        BIT STRING (SIZE (32)),
                                        BIT STRING (SIZE (24)),
    omegaDot
    iDot
                                        BIT STRING (SIZE (14))
NC-Mode ::=
                                    BIT STRING (SIZE (3))
                                     SEQUENCE {
Neighbour ::=
    modeSpecificInfo
                                     CHOICE {
        fdd
                                         SEQUENCE {
           neighbourIdentity
                                                 PrimaryCPICH-Info
           uE-RX-TX-TimeDifferenceType2Info
                                               UE-RX-TX-TimeDifferenceType2Info
                                                                                      OPTIONAL
        tdd
                                        SEQUENCE {
           neighbourAndChannelIdentity CellAndChannelIdentity
                                                                                      OPTIONAL
        }
    neighbourQuality
                                        NeighbourQuality,
    neignbourguality Neignbourguality, sfn-SFN-ObsTimeDifference2 SFN-SFN-ObsTimeDifference2}
Neighbour-v390ext ::=
                                             SEQUENCE {
                          CHOICE {
    modeSpecificInfo
                                    SEQUENCE {
        fdd
            frequencyInfo
                                                FrequencyInfo
        tdd
                                        NULL
}
                                   SEQUENCE (SIZE (1..maxCellMeas)) OF
NeighbourList ::=
                                        Neighbour
Neighbour-TDD-r7 ::=
                                    SEQUENCE {
                                                                                  OPTIONAL
                                        UARFCN
   uarfcn
-- The order of the cells in IE NeighbourList-TDD-r7 shall be the
-- same as the order in IE NeighbourList
NeighbourList-TDD-r7 ::= SEQUI
                                    SEQUENCE (SIZE (1..maxCellMeas)) OF Neighbour-TDD-r7
-- The order of the cells in IE NeighbourList-v390ext shall be the
-- same as the order in IE NeighbourList
NeighbourList-v390ext ::=
                                             SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        Neighbour-v390ext
NeighbourQuality ::=
                                     SEQUENCE {
    ue-Positioning-OTDOA-Quality
                                     UE-Positioning-OTDOA-Quality
NewInterFreqCell ::=
                                     SEQUENCE {
    interFreqCellID
                                         InterFreqCellID
                                                                              OPTIONAL,
    frequencyInfo
                                         FrequencyInfo
                                                                              OPTIONAL.
    cellInfo
                                        CellInfo
NewInterFreqCell-r4 ::=
   interFreqCellID
   frequencyInfo
                                     SEQUENCE {
                                        InterFreqCellID
                                                                             OPTIONAL.
    frequencyInfo
                                        FrequencyInfo
                                                                              OPTIONAL,
   cellInfo
                                         CellInfo-r4
}
NewInterFreqCell-v7b0ext ::= SEQUENCE { intraSecondaryFreqIndicator BOOLEA
                                       BOOLEAN
}
```

```
NewInterFreqCellList ::=
                                                                 SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                           NewInterFreqCell
NewInterFreqCellList-r4 ::=
                                                                SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                           NewInterFreqCell-r4
 -- The order of the list corresponds to the order of cells in newInterFreqCellList
\label{eq:newInterFreqCellList-v7b0ext} \textbf{NewInterFreqCellList-v7b0ext} \ ::= \ \ \textbf{SEQUENCE} \ (\textbf{SIZE} \ (\textbf{1..maxCellMeas})) \ \textbf{OF}
                                                                          NewInterFreqCell-v7b0ext
NewInterFreqCellSI-RSCP ::=
   interFreqCellID
                                                                        SEQUENCE {
                                                                          InterFreqCellID
FrequencyInfo
                                                                                                                                                OPTIONAL.
        frequencyInfo
                                                                                                                                                OPTIONAL,
       cellInfo
                                                                          CellInfoSI-RSCP
}
                                                                 SEQUENCE {
NewInterFreqCellSI-ECN0 ::=
       interFreqCellID
                                                                           InterFreqCellID
                                                                                                                                               OPTIONAL,
       frequencyInfo
                                                                          FrequencyInfo
                                                                                                                                               OPTIONAL,
       cellInfo
                                                                           CellInfoSI-ECN0
}
NewInterFreqCellSI-HCS-RSCP ::= SEQUENCE { interFreqCellID InterFreqCellID
                                                                                                                                               OPTIONAL,
                                                                          FrequencyInfo
                                                                                                                                                OPTIONAL,
        frequencyInfo
                                                                           CellInfoSI-HCS-RSCP
        cellInfo
                                                                 SEQUENCE (
InterFreqCellID
FrequencyInfo
NewInterFreqCellSI-HCS-ECN0 ::=
                                                                                                                                                OPTIONAL.
       interFreqCellID
        frequencyInfo
                                                                                                                                                OPTIONAL,
                                                                        CellInfoSI-HCS-ECN0
       cellInfo
}
                                                                                                                                                OPTIONAL,
                                                                                                                                                OPTIONAL,
                                                                          CellInfoSI-RSCP-LCR-r4
        cellInfo
}
NewInterFreqCellSI-ECN0-LCR-r4 ::=
                                                                   SEQUENCE (
InterFreqCellID
       interFreqCellID
                                                                                                                                               OPTIONAL,
        frequencyInfo
                                                                          FrequencyInfo
                                                                                                                                               OPTIONAL,
        cellInfo
                                                                           CellInfoSI-ECN0-LCR-r4
}
NewInterFreqCellSI-HCS-RSCP-LCR-r4 ::=
                                                                                  SEOUENCE {
        interFreqCellID
                                                                           InterFreqCellID
                                                                                                                                               OPTIONAL,
        frequencyInfo
                                                                            FrequencyInfo
                                                                                                                                                OPTIONAL,
                                                                           CellInfoSI-HCS-RSCP-LCR-r4
       cellInfo
}
NewInterFreqCellSI-HCS-ECN0-LCR-r4 ::=
                                                                                 SEQUENCE {
        interFreqCellID
                                                                            InterFreqCellID
                                                                                                                                               OPTIONAL,
        frequencyInfo
                                                                            FrequencyInfo
                                                                                                                                              OPTIONAL,
                                                                            CellInfoSI-HCS-ECN0-LCR-r4
        {\tt cellInfo}
NewInterFreqCellSI-List-ECN0 ::=
                                                                                   SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                          NewInterFreqCellSI-ECN0
NewInterFreqCellSI-List-HCS-RSCP ::=
                                                                                           SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                           NewInterFreqCellSI-HCS-RSCP
                                                                                           SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-List-HCS-ECN0 ::=
                                                                           NewInterFreqCellSI-HCS-ECN0
                                                                           SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-List-RSCP ::=
                                                                           NewInterFreqCellSI-RSCP
NewInterFreqCellSI-List-ECNO-LCR-r4 ::=
                                                                                   SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                           NewInterFreqCellSI-ECN0-LCR-r4
NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                           NewInterFreqCellSI-HCS-RSCP-LCR-r4
\verb|NewInterFreqCellSI-List-HCS-ECN0-LCR-r4| ::= SEQUENCE (SIZE (1..maxCellMeas)) | OF the context of the conte
                                                                            NewInterFreqCellSI-HCS-ECN0-LCR-r4
```

```
NewInterFreqCellSI-List-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                   NewInterFreqCellSI-RSCP-LCR-r4
NewInterRATCell ::=
                            SEQUENCE {
   technologySpecificInfo CHOICE {
gsm
                                                       OPTIONAL,
          Frequency-Band, BCCH-ARFCN,
          frequency-band
          bcch-ARFCN
          -- dummy is not used in this version of the specification, it should
          -- not be sent and if received it should be ignored.
                                          NULL
                                                             OPTIONAL
       is-2000
                                       SEQUENCE {
          is-2000SpecificMeasInfo
                                          IS-2000SpecificMeasInfo
       -- ASN.1 inconsistency: NewInterRATCellList should be optional within
       -- InterRATCellInfoList. The UE shall consider IE NewInterRATCell with
       -- technologySpecificInfo set to "absent" as valid and handle the
       -- message as if the IE NewInterRATCell was absent
                                       NULL,
       absent
       spare1
                                       NULL
   }
}
OPTIONAL,
          Frequency-Band,
          frequency-band
                                          BCCH-ARFCN,
          bcch-ARFCN
          -- dummy is not used in this version of the specification, it should
          -- not be sent and if received it should be ignored.
                                          NULL
       },
       is-2000
                                       SEQUENCE {
          is-2000SpecificMeasInfo
                                           IS-2000SpecificMeasInfo
       -- ASN.1 inconsistency: NewInterRATCellList-B should be optional within
       -- InterRATCellInfoList-B. The UE shall consider IE NewInterRATCell-B with
       -- technologySpecificInfo set to "absent" as valid and handle the
       -- message as if the IE NewInterRATCell-B was absent
       absent
                                       NULL,
                                       NULL
       spare1
   }
}
NewInterRATCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                   NewInterRATCell
NewInterRATCellList-B ::=
                               SEQUENCE (SIZE (1..maxCellMeas)) OF
                                   NewInterRATCell-B
NewIntraFreqCell ::=
                                SEQUENCE {
   intraFreqCellID
                                   IntraFreqCellID
                                                                   OPTIONAL,
   cellInfo
                                    CellInfo
}
NewIntraFreqCell-r4 ::=
   intraFreqCellID
                              SEQUENCE {
                                                                   OPTIONAL,
                                   IntraFreqCellID
   cellInfo
                                    CellInfo-r4
\label{eq:continuous} {\tt NewIntraFreqCellList} ::= \\ {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxCellMeas})) \ {\tt OF}
                                   NewIntraFreqCell
NewIntraFreqCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                   NewIntraFreqCell-r4
NewIntraFreqCellSI-RSCP ::=
                                   SECUENCE {
   intraFreqCellID
                                    IntraFreqCellID
                                                                    OPTIONAL,
```

```
cellInfo
                                                                       CellInfoSI-RSCP
}
\label{eq:new_new_new_problem} \mbox{NewIntraFreqCellSI-ECNO} ::= \mbox{SEQUENCE } \{
       intraFreqCellID
                                                                   IntraFreqCellID
                                                                                                                                          OPTIONAL.
                                                                        CellInfoSI-ECN0
       cellInfo
NewIntraFreqCellSI-HCS-RSCP ::= SEQUENCE {
                                                                  IntraFreqCellID
       intraFreqCellID
                                                                                                                                          OPTIONAL,
       cellInfo
                                                                        CellInfoSI-HCS-RSCP
}
\label{eq:new_new_prop} {\tt NewIntraFreqCellSI-HCS-ECNO} \ ::= \ \ \ {\tt SEQUENCE} \ \big\{
                                                                    IntraFreqCellID
      intraFreqCellID
                                                                                                                                          OPTIONAL,
       cellInfo
                                                                        CellInfoSI-HCS-ECN0
}
{\tt NewIntraFreqCellSI-RSCP-LCR-r4} \ ::= \ \ \ {\tt SEQUENCE} \ \big\{
      intraFreqCellID
                                                                        IntraFreqCellID
                                                                                                                                         OPTIONAL,
       cellInfo
                                                                        CellInfoSI-RSCP-LCR-r4
}
intraFreqCellID
                                                                        IntraFreqCellID
                                                                                                                                          OPTIONAL,
      cellInfo
                                                                        CellInfoSI-ECNO-LCR-r4
NewIntraFreqCellSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
       intraFreqCellID
                                                                         IntraFreqCellID
                                                                                                                                         OPTIONAL,
       cellInfo
                                                                         CellInfoSI-HCS-RSCP-LCR-r4
}
NewIntraFreqCellSI-HCS-ECNO-LCR-r4 ::= SEQUENCE {
      intraFreqCellID
                                                                        IntraFreqCellID
                                                                                                                                        OPTIONAL,
       cellInfo
                                                                        CellInfoSI-HCS-ECN0-LCR-r4
                                                                     SEQUENCE (SIZE (1..maxCellMeas)) OF
NewIntraFreqCellSI-List-RSCP ::=
                                                                               NewIntraFreqCellSI-RSCP
                                                                     SEQUENCE (SIZE (1..maxCellMeas)) OF
NewIntraFreqCellSI-List-ECN0 ::=
                                                                        NewIntraFreqCellSI-ECN0
NewIntraFreqCellSI-List-HCS-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                        NewIntraFreqCellSI-HCS-RSCP
                                                                         SEQUENCE (SIZE (1..maxCellMeas)) OF
NewIntraFreqCellSI-List-HCS-ECN0 ::=
                                                                         NewIntraFreqCellSI-HCS-ECN0
                                                                                SEQUENCE (SIZE (1..maxCellMeas)) OF
NewIntraFreqCellSI-List-RSCP-LCR-r4 ::=
                                                                                NewIntraFreqCellSI-RSCP-LCR-r4
NewIntraFreqCellSI-List-ECN0-LCR-r4 ::=
                                                                             SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                         NewIntraFreqCellSI-ECN0-LCR-r4
\verb|NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4| ::= SEQUENCE (SIZE (1..maxCellMeas)) | OF the context of the conte
                                                                         NewIntraFreqCellSI-HCS-RSCP-LCR-r4
NewIntraFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                        NewIntraFreqCellSI-HCS-ECN0-LCR-r4
       -- IE "nonUsedFreqThreshold" is not needed in case of event 2a
       -- In case of event 2a UTRAN should include value 0 within IE "nonUsedFreqThreshold"
       -- In case of event 2a, the UE shall be ignore IE "nonUsedFreqThreshold"
       \operatorname{--} In later versions of the message including this IE, a special version of
       -- IE "NonUsedFreqParameterList" may be defined for event 2a, namely a
       -- version not including IE "nonUsedFreqThreshold"
                                                  SEQUENCE {
NonUsedFreqParameter ::=
       nonUsedFreqThreshold
                                                                        Threshold,
       nonUsedFreqW
                                                                         W
NonUsedFreqParameter-r6 ::=
                                                              SEQUENCE {
       nonUsedFreqThreshold
                                                                        Threshold-r6,
       nonUsedFreqW
}
\label{eq:nonusedFreqParameterList} \mbox{NonUsedFreqParameterList} ::= \mbox{SEQUENCE (SIZE (1..maxFreq)) OF}
                                                                         NonUsedFreqParameter
```

```
\label{eq:nonusedFreqParameterList-r6} \mbox{NonUsedFreqParameterList-r6} ::= \mbox{SEQUENCE (SIZE (1..maxFreq)) OF}
                                        NonUsedFregParameter-r6
NonUsedFreqWList-r6 ::= SEQUENCE (SIZE (1..maxFreq)) OF W
ObservedTimeDifferenceToGSM ::=
                                    INTEGER (0..4095)
                                     ENUMERATED {
OTDOA-SearchWindowSize ::=
                                         c20, c40, c80, c160, c320,
                                         c640, c1280, moreThan1280 }
-- SPARE: Pathloss, Max = 158
-- Values above Max are spare
Pathloss ::=
                                     INTEGER (46..173)
PenaltyTime-RSCP ::=
                                     CHOICE {
                                        NULL,
   notUsed
                                         TemporaryOffset1,
   pt10
    pt20
                                         TemporaryOffset1,
                                         TemporaryOffset1,
    pt30
    pt40
                                         TemporaryOffset1,
                                         TemporaryOffset1,
    pt50
    pt60
                                         TemporaryOffset1
}
PenaltyTime-ECN0 ::=
                                    CHOICE {
                                        NULL,
   notUsed
   pt10
                                         TemporaryOffsetList,
                                         TemporaryOffsetList,
   pt20
    pt30
                                         TemporaryOffsetList,
                                         TemporaryOffsetList,
    pt40
    pt50
                                         TemporaryOffsetList,
                                         TemporaryOffsetList
    pt60
PendingTimeAfterTrigger ::=
                                     ENUMERATED {
                                      ptat0-25, ptat0-5, ptat1,
                                         ptat2, ptat4, ptat8, ptat16 }
PeriodicalOrEventTrigger ::=
                                     ENUMERATED {
                                        periodical,
                                         eventTrigger }
PeriodicalReportingCriteria ::= SEQUENCE {
    reportingAmount
                                        ReportingAmount
                                                                        DEFAULT ra-Infinity,
                                         ReportingIntervalLong
    reportingInterval
}
PeriodicalWithReportingCellStatus ::= SEQUENCE {
   periodicalReportingCriteria PeriodicalReportingCriteria, reportingCellStatus ReportingCellStatus
                                                                            OPTIONAL
}
OPTIONAL,
OPTIONAL,
OPTIONAL
}
{\tt PLMNsOfInterFreqCellsList} ::= \\ {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxCellMeas})) \ {\tt OF} \\
                                         SEQUENCE {
                                                PLMN-Identity
   plmn-Identity
                                                                            OPTIONAL
}
PLMNsOfIntraFreqCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                         SEQUENCE {
                                                PLMN-Identity
                                                                            OPTIONAL
   plmn-Identity
}
PLMNsOfInterRATCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                         SEQUENCE {
                                                                            OPTIONAL
   plmn-Identity
                                                PLMN-Identity
}
PositionEstimate ::= CHOICE {
    ellipsoidPoint Ellip
    ellipsoidPointUncertCircle Ellip
                                     EllipsoidPoint,
                                        EllipsoidPointUncertCircle,
```

```
ellipsoidPointUncertEllipse
                                       EllipsoidPointUncertEllipse,
    ellipsoidPointAltitude
                                        EllipsoidPointAltitude,
    ellipsoidPointAltitudeEllipse
                                       EllipsoidPointAltitudeEllipsoide
}
PositioningMethod ::=
                                    ENUMERATED {
                                        ot.doa.
                                        gps,
                                        otdoaOrGPS, cellID }
-- Actual value PRC = IE value * 0.32
                                    INTEGER (-2047..2047)
PRC ::=
-- SPARE: PrimaryCCPCH-RSCP, Max = 91
-- Values above Max are spare
PrimaryCCPCH-RSCP ::=
                                    INTEGER (0..127)
Q-HCS ::=
                                    INTEGER (0..99)
Q-OffsetS-N ::=
                                    INTEGER (-50..50)
Q-QualMin ::=
                                    INTEGER (-24..0)
Q-QualMin-Offset ::=
                                    INTEGER (1..16)
-- Actual value Q-RxlevMin = (IE value * 2) + 1
Q-RxlevMin ::=
                                   INTEGER (-58..-13)
-- Actual value Q-RxlevMin-Offset = (IE value * 2)
Q-RxlevMin-Offset ::=
                                   INTEGER (1..8)
                                    SEQUENCE (SIZE (1..maxTrCH)) OF
QualityEventResults ::=
                                        TransportChannelIdentity
                                    SEQUENCE {
QualityMeasuredResults ::=
    blerMeasurementResultsList
                                       BLER-MeasurementResultsList
                                                                           OPTIONAL,
   modeSpecificInfo
                                        CHOICE {
        fdd
                                           NULL,
                                           SEQUENCE {
        tdd
            sir-MeasurementResults
                                                SIR-MeasurementList
                                                                          OPTIONAL
    }
}
QualityMeasurement ::=
                                    SEQUENCE {
    qualityReportingQuantity
                                        QualityReportingQuantity
                                                                           OPTIONAL,
                                        QualityReportCriteria
    reportCriteria
}
QualityReportCriteria ::=
                                    CHOICE {
    qualityReportingCriteria
                                        QualityReportingCriteria,
    periodicalReportingCriteria
                                        PeriodicalReportingCriteria,
    noReporting
                                       NULL
                                    SEQUENCE (SIZE (1..maxTrCH)) OF
QualityReportingCriteria ::=
                                        QualityReportingCriteriaSingle
QualityReportingCriteriaSingle ::= SEQUENCE {
                                        TransportChannelIdentity,
    transportChannelIdentity
                                        INTEGER (1..512),
    totalCRC
   badCRC
                                        INTEGER (1..512),
   pendingAfterTrigger
                                        INTEGER (1..512)
QualityReportingQuantity ::=
                                    SEQUENCE {
    dl-TransChBLER
                                        BOOLEAN,
    bler-dl-TransChIdList
                                        BLER-TransChIdList
                                                                           OPTIONAL,
                                        CHOICE {
    modeSpecificInfo
        fdd
                                           NULL
        tdd
                                           SEQUENCE {
           sir-TFCS-List
                                                SIR-TFCS-List
                                                                           OPTIONAL
}
RAT-Type ::=
                                    ENUMERATED {
                                        gsm, is2000 }
```

```
CHOICE {
ReferenceCellPosition ::=
       ellipsoidPoint
                                                                         EllipsoidPoint,
       ellipsoidPointWithAltitude
                                                                          EllipsoidPointAltitude
 -- ReferenceLocation, as defined in 23.032
                                                          SEQUENCE {
ReferenceLocation ::=
       ellipsoidPointAltitudeEllipsoide
                                                                                  EllipsoidPointAltitudeEllipsoide
                                                      SEQUENCE {
ReferenceLocationGANSS ::=
       ellipsoidPointAltitudeEllipsoide EllipsoidPointAltitudeEllipsoide
ReferenceTimeDifferenceToCell ::=
                                                                 CHOICE {
       -- Actual value accuracy40 = IE value * 40
       accuracy40
                                                                          INTEGER (0..960),
        -- Actual value accuracy256 = IE value * 256
                                                                          INTEGER (0..150),
       accuracy256
        -- Actual value accuracy2560 = IE value * 2560
       accuracy2560
                                                                          INTEGER (0..15)
}
RemovedInterFreqCellList ::=
                                                                  CHOICE {
       removeAllInterFreqCells
                                                                        NULL.
       removeSomeInterFreqCells
                                                                          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                                 InterFreqCellID,
       removeNoInterFreqCells
}
RemovedInterRATCellList ::= CHOICE {
                                                         NULL,
SEQUENCE (SIZE (1..maxCellMeas)) OF
       removeAllInterRATCells
       removeSomeInterRATCells
                                                                                  InterRATCellID,
       removeNoInterRATCells
                                                                  NULL
}
RemovedIntraFreqCellList ::= CHOICE {
    removeAllIntraFreqCells NULL
    removeSomeIntraFreqCells SEQUE
                                                                   NULÌ,
                                                                          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                                 IntraFregCellID,
                                                                         NULL
       removeNoIntraFreqCells
}
ReplacementActivationThreshold ::= ENUMERATED {
                                                                          notApplicable, t1, t2,
                                                                           t3, t4, t5, t6, t7 }
ReportDeactivationThreshold ::=
                                                                   ENUMERATED {
                                                                          notApplicable, t1, t2,
                                                                           t3, t4, t5, t6, t7 }
ReportingAmount ::=
                                                                   ENUMERATED {
                                                                          ral, ra2, ra4, ra8, ra16, ra32,
                                                                          ra64, ra-Infinity }
ReportingCellStatus ::=
                                                                   CHOICE {
       withinActiveSet
                                                                          MaxNumberOfReportingCellsType1,
       withinMonitoredSetUsedFreq
                                                                          MaxNumberOfReportingCellsType1,
       within \verb|Active| And \verb|OrMonitored| Used Freq MaxNumber Of Reporting Cells Type 1,
       withinDetectedSetUsedFreq
                                                                          MaxNumberOfReportingCellsType1,
       withinMonitoredAndOrDetectedUsedFreq
                                                                         MaxNumberOfReportingCellsType1,
       allActiveplusMonitoredSet
                                                                         MaxNumberOfReportingCellsType3,
       allActivePlusDetectedSet
                                                                         MaxNumberOfReportingCellsType3,
       \verb|allActivePlusMonitoredAndOrDetectedSet| \\
                                                                        MaxNumberOfReportingCellsType3,
       withinVirtualActSet
                                                                  MaxNumberOfReportingCellsType1,
       withinMonitoredSetNonUsedFreq
                                                                         MaxNumberOfReportingCellsType1,
       within \verb|Monitored| And \verb|OrVirtual| Active SetNon Used Freq
                                                                          MaxNumberOfReportingCellsType1,
       \verb|allVirtualActSetplusMonitoredSetNonUsedFreq|\\
                                                                          MaxNumberOfReportingCellsType3,
       withinActSetOrVirtualActSet-InterRATcells
                                                                          MaxNumberOfReportingCellsType2,
       with \verb|inActSetAndOrMonitoredUsedFreqOrV| intual \verb|ActSetAndOrMonitoredNonUsedFreqOrV| in the last of the following the following states of the foll
                                                                           MaxNumberOfReportingCellsType2
```

```
}
ReportingCellStatusOpt ::= SEQUENCE {
    reportingCellStatus Report
                                                                              OPTIONAL
  reportingCellStatus
                                       ReportingCellStatus
reportCriteria
                                         CellDCH-ReportCriteria
}
ReportingInfoForCellDCH-LCR-r4 ::= SEQUENCE {
    intraFreqReportingQuantity IntraFreqReportingQuantity,
measurementReportingMode MeasurementReportingMode,
reportCriteria CellDCH-ReportCriteria-LCR-
                                        CellDCH-ReportCriteria-LCR-r4
    reportCriteria
}
ReportingInterval ::=
                                    ENUMERATED {
                                         noPeriodicalreporting, ri0-25,
                                         ri0-5, ri1, ri2, ri4, ri8, ri16 }
ReportingIntervalLong ::=
                                      ENUMERATED {
                                         ril0, ril0-25, ril0-5, ril1,
                                          ril2, ril3, ril4, ril6, ril8,
                                         ril12, ril16, ril20, ril24,
                                      ril28, ril32, ril64 \} -- When the value "ril0" is used, the UE behaviour is not
                                      -- defined.
-- Actual value ReportingRange = IE value * 0.5
                                     INTEGER (0..29)
ReportingRange ::=
                               SEQUENCE {
ReqDataBitAssistance ::=
                                     DGANSS-Sig-Id-Req,
    ganssSignalID
    ganssDataBitInterval
                                         INTEGER (0..15),
                                         SEQUENCE (SIZE (1..maxGANSSSat)) OF INTEGER(0..63) OPTIONAL
    ganssSatelliteInfo
                                   SEQUENCE (SIZE (1..maxRL)) OF
RL-AdditionInfoList ::=
                                         PrimaryCPICH-Info
   InformationLists ::=
  rl-AdditionInfoList
  rL-RemovalInformationList
RL-InformationLists ::=
                                     SEQUENCE {
                                      RL-AdditionInfoList
RL-RemovalInformationList
                                                                              OPTIONAL,
                                                                               OPTIONAL
RLC-BuffersPayload ::=
                                      ENUMERATED {
                                          plo, pl4, pl8, pl16, pl32,
                                          pl64, pl128, pl256, pl512, pl1024,
                                          pl2k, pl4k, pl8k, pl16k, pl32k,
                                          pl64k, pl128k, pl256k, pl512k, pl1024k,
                                          spare12, spare11, spare10, spare9, spare8,
                                          spare7, spare6, spare5, spare4, spare3,
spare2, spare1 }
-- Actual value RRC = IE value * 0.032
RRC ::=
                                      INTEGER (-127..127)
                                      SEOUENCE {
SatData ::=
    satID
                                         SatID,
    iode
                                          IODE
}
SatDataList ::=
                                     SEQUENCE (SIZE (0..maxSat)) OF
                                         SatData
SatellitesListRelatedData ::=
                                     SEOUENCE {
    satId
                                          INTEGER (0..63),
                                          INTEGER (0..1023)
}
SatellitesListRelatedDataList ::=
                                     SEQUENCE (SIZE (1..maxGANSSSat)) OF
                                          SatellitesListRelatedData
SatelliteStatus ::=
                                      ENUMERATED {
                                         ns-NN-U,
```

```
es-SN,
                                         es-NN-U,
                                        rev2.
                                         rev }
Satellite-clock-model ::=
                                    SEQUENCE {
                                        BIT STRING (SIZE (14)),
   t-oc
   af2
                                        BIT STRING (SIZE (12)),
    af1
                                        BIT STRING (SIZE (18)),
                                        BIT STRING (SIZE (28)),
   af0
                                        BIT STRING (SIZE (10))
    t.ad
                                                                             OPTIONAL.
    model-id
                                        INTEGER (0..1)
                                                                             OPTIONAL.
}
                                   SEQUENCE (SIZE (1..maxSatClockModels)) OF Satellite-clock-model
Satellite-clock-modelList ::=
-- Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in [12].
                                    INTEGER (0..63)
SFN-Offset-Validity ::=
                               ENUMERATED { false }
SFN-SFN-Drift ::=
                                    ENUMERATED {
                                        sfnsfndrift0, sfnsfndrift1, sfnsfndrift2,
                                        sfnsfndrift3, sfnsfndrift4, sfnsfndrift5, sfnsfndrift8, sfnsfndrift10, sfnsfndrift15,
                                         sfnsfndrift25, sfnsfndrift35, sfnsfndrift50,
                                         sfnsfndrift65, sfnsfndrift80, sfnsfndrift100,
                                        sfnsfndrift-1, sfnsfndrift-2, sfnsfndrift-3,
                                         sfnsfndrift-4, sfnsfndrift-5, sfnsfndrift-8,
                                        sfnsfndrift-10, sfnsfndrift-15, sfnsfndrift-25,
                                         sfnsfndrift-35, sfnsfndrift-50, sfnsfndrift-65,
                                        sfnsfndrift-80, sfnsfndrift-100}
SFN-SFN-ObsTimeDifference ::= CHOICE {
    type1
                                        SFN-SFN-ObsTimeDifference1,
                                        SFN-SFN-ObsTimeDifference2
    type2
}
-- SPARE: SFN-SFN-ObsTimeDifference1, Max = 9830399
-- For 1.28Mcps TDD, Max value of SFN-SFN-ObsTimeDifference1 is 3276799.
-- Values above Max are spare
SFN-SFN-ObsTimeDifference1 ::=
                                  INTEGER (0..16777215)
-- SPARE: SFN-SFN-ObsTimeDifference2, Max = 40961
-- For 1.28Mcps TDD, Max value of SFN-SFN-ObsTimeDifference2 is 27649.
-- Values above Max are spare
SFN-SFN-ObsTimeDifference2 ::=
                                   INTEGER (0..65535)
SFN-SFN-OTD-Type ::=
                                    ENUMERATED {
                                        noReport,
                                         type1,
                                         type2 }
{\tt SFN-SFN-RelTimeDifference1} ::= \\ {\tt SEQUENCE} \ \{
    sfn-Offset
                                        INTEGER (0 .. 4095),
                                        INTEGER (0.. 38399)
    sfn-sfn-Reltimedifference
SFN-TOW-Uncertainty ::=
                                    ENUMERATED {
                                        lessThan10,
                                         moreThan10 }
                                    INTEGER (0..63)
STR ::=
SIR-MeasurementList ::=
                                   SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        SIR-MeasurementResults
SIR-MeasurementResults ::=
                                    SEQUENCE {
   tfcs-ID
                                       TFCS-IdentityPlain,
                                        SIR-TimeslotList
    sir-TimeslotList
SIR-TFCS ::=
                                    TFCS-IdentityPlain
```

```
SIR-TFCS-List ::=
                                    SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        SIR-TFCS
SIR-TimeslotList ::=
                                    SEQUENCE (SIZE (1..maxTS)) OF
-- SubFramelReserved, reserved bits in subframe 1 of the GPS navigation message
SubFrame1Reserved ::=
                                    SEQUENCE {
   reserved1
                                        BIT STRING (SIZE (23)),
                                        BIT STRING (SIZE (24)),
   reserved2
   reserved3
                                        BIT STRING (SIZE (24)),
                                        BIT STRING (SIZE (16))
   reserved4
}
T-ADVinfo ::=
                                    SEQUENCE {
                t - ADV
                                        INTEGER (0..2047),
                sfn
                                        INTEGER (0..4095)
}
                                    SEQUENCE {
T-ADVinfo-ext ::=
                                        INTEGER (0..8191),
    t-ADV
                                        INTEGER (0..4095)
                                    CHOICE {
T-CRMax ::=
   notUsed
                                       NULL,
                                        N-CR-T-CRMaxHyst,
    t30
   t60
                                        N-CR-T-CRMaxHyst,
                                        N-CR-T-CRMaxHyst,
   t.120
    t.180
                                        N-CR-T-CRMaxHyst,
                                        N-CR-T-CRMaxHyst
    t240
}
T-CRMaxHyst ::=
                                    ENUMERATED {
                                        notUsed, t10, t20, t30,
                                        t40, t50, t60, t70 }
TemporaryOffset1 ::=
                                    ENUMERATED {
                                        to3, to6, to9, to12, to15,
                                        to18, to21, infinite }
                                    ENUMERATED {
TemporaryOffset2 ::=
                                        to2, to3, to4, to6, to8,
                                        to10, to12, infinite }
      aryOffsetList ::=
temporaryOffset1
TemporaryOffsetList ::=
                                    SEQUENCE {
                                    TemporaryOffset1,
        temporaryOffset2
                                        TemporaryOffset2
}
                                    INTEGER (-115..0)
Threshold ::=
                                            INTEGER (-120..0)
Threshold-r6 ::=
-- The order of the list corresponds to the order of frequency defined in Inter-FreqEventCriteria
\label{thm:convergence}  \mbox{ThreholdNonUsedFrequency-deltaList} ::= \mbox{SEQUENCE (SIZE (1..maxFreq)) OF} \\
                                            DeltaRSCPPerCell
                                    ENUMERATED {
ThresholdPositionChange ::=
                                        pc10, pc20, pc30, pc40, pc50,
                                         pc100, pc200, pc300, pc500,
                                        pc1000, pc2000, pc5000, pc10000,
                                        pc20000, pc50000, pc100000 }
ThresholdSFN-GANSS-TOW ::=
                                    ENUMERATED {
                                        us1, us2, us3, us5, us10,
                                        us20, us50, us100 }
ThresholdSFN-GPS-TOW ::=
                                    ENUMERATED {
                                        ms1, ms2, ms3, ms5, ms10,
                                        ms20, ms50, ms100 }
ThresholdSFN-GPS-TOW-us ::=
                                    ENUMERATED {
                                        us1, us2, us3, us5, us10,
                                        us20, us50, us100 }
ThresholdSFN-SFN-Change ::=
                                    ENUMERATED {
```

```
c0-25, c0-5, c1, c2, c3, c4, c5,
                                       c10, c20, c50, c100, c200, c500,
                                       c1000, c2000, c5000 }
ThresholdUsedFrequency ::=
                                   INTEGER (-115..165)
ThresholdUsedFrequency-r6 ::=
                                  INTEGER (-120..165)
-- Actual value TimeInterval = IE value * 20.
TimeInterval ::=
                                   INTEGER (1..13)
TimeslotInfo · · =
                                   SEQUENCE {
   timeslotNumber
                                       TimeslotNumber,
   burstType
                                       BurstType
}
TimeslotInfo-LCR-r4 ::= SEQUENCE {
   timeslotNumber
                                      TimeslotNumber-LCR-r4
                                  SEQUENCE (SIZE (1..maxTS)) OF
TimeslotInfoList ::=
                                       TimeslotInfo
TimeslotInfoList-LCR-r4 ::= SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                      TimeslotInfo-LCR-r4
                                   CHOICE {
TimeslotInfoList-r4 ::=
    -- the choice for 7.68 Mcps TDD is the same as for 3.84 Mcps TDD --
    t.dd384
                                       SEQUENCE (SIZE (1..maxTS)) OF
                                          TimeslotInfo,
   tdd128
                                       SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                           TimeslotInfo-LCR-r4
-- SPARE: TimeslotISCP, Max = 91
-- Values above Max are spare
TimeslotISCP ::=
                                  INTEGER (0..127)
 - TimeslotISCP-List shall not include more than 6 elements in 1.28Mcps TDD mode.
                                  SEQUENCE (SIZE (1..maxTS)) OF
TimeslotISCP-List ::=
                                       TimeslotISCP
TimeslotListWithISCP ::=
                                   SEQUENCE (SIZE (1..maxTS)) OF
                                      TimeslotWithISCP
TimeslotWithISCP ::=
                                  SEQUENCE {
                                       TimeslotNumber,
    timeslot
    timeslotISCP
                                      TimeslotISCP
TimeToTrigger ::=
                                   ENUMERATED {
                                       ttt0, ttt10, ttt20, ttt40, ttt60,
                                       ttt80, ttt100, ttt120, ttt160,
                                       ttt200, ttt240, tt320, ttt640,
                                       ttt1280, ttt2560, ttt5000 }
TrafficVolumeEventParam ::=
                                   SEQUENCE {
                                       TrafficVolumeEventType,
    event.ID
    reportingThreshold
                                      TrafficVolumeThreshold,
    timeToTrigger
                                       TimeToTrigger
                                                                          OPTIONAL,
   pendingTimeAfterTrigger
                                      PendingTimeAfterTrigger
                                                                          OPTIONAL,
                                      TX-InterruptionAfterTrigger
    tx-InterruptionAfterTrigger
                                                                         OPTIONAL
}
TrafficVolumeEventResults ::=
                                   SEQUENCE {
   ul-transportChannelCausingEvent UL-TrCH-Identity,
   trafficVolumeEventIdentity
                                      TrafficVolumeEventType
TrafficVolumeEventType ::=
                                ENUMERATED {
                                      e4a,
                                       e4b }
TrafficVolumeMeasQuantity ::= CHOICE {
    rlc-BufferPayload NULL
    averageRLC-BufferPayload Time
                                      NULL
                                       TimeInterval,
```

```
varianceOfRLC-BufferPayload
                                         TimeInterval
}
    fficVolumeMeasSysInfo ::= SEQUENCE {
trafficVolumeMeasurementID MeasurementIdentity
TrafficVolumeMeasSysInfo ::=
                                                                       DEFAULT 4.
    trafficVolumeMeasurementObjectList TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity TrafficVolumeMeasQuantity OPTIONAL, trafficVolumeReportingQuantity TrafficVolumeReportingQuantity OPTIONAL,
    -- dummy is not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
                                         TrafficVolumeReportingCriteria OPTIONAL,
    dummy
    measurementValidity
                                          MeasurementValidity
                                                                                 OPTIONAL.
                                     MeasurementReportingMode,
    measurementReportingMode
    reportCriteriaSysInf
                                          TrafficVolumeReportCriteriaSysInfo
}
TrafficVolumeMeasuredResults ::= SEQUENCE {
    rb-Identity
                                        RB-Identity,
    rlc-BuffersPayload
    averageRLC-BufferPayload
                                          RLC-BuffersPayload
                                                                                 OPTIONAL,
                                          AverageRLC-BufferPayload
                                                                                 OPTIONAL,
    varianceOfRLC-BufferPayload
                                          VarianceOfRLC-BufferPayload
                                                                                OPTIONAL
{\tt TrafficVolumeMeasuredResultsList} \ ::= \ {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxRB})) \ {\tt OF}
                                          TrafficVolumeMeasuredResults
TrafficVolumeMeasurement ::= SEQUENCE {
    trafficVolumeMeasurementObjectList TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity TrafficVolumeMeasQuantity OPTIONAL, trafficVolumeReportingQuantity TrafficVolumeReportingQuantity MeasurementValidity OPTIONAL, OPTIONAL,
                                                                              OPTIONAL,
    reportCriteria
                                          TrafficVolumeReportCriteria
}
TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
                                              UL-TrCH-Identity
TrafficVolumeReportCriteria ::= CHOICE {
    {\tt traffic Volume Reporting Criteria} \qquad {\tt Traffic Volume Reporting Criteria},
    periodicalReportingCriteria
                                          PeriodicalReportingCriteria,
    noReporting
                                          NULL
}
TrafficVolumeReportCriteriaSysInfo ::= CHOICE {
    trafficVolumeReportingCriteria TrafficVolumeReportingCriteria periodicalReportingCriteria PeriodicalReportingCriteria
                                          TrafficVolumeReportingCriteria,
}
TrafficVolumeReportingCriteria ::= SEQUENCE {
    -- NOTE: transChCriteriaList should be mandatory in later versions of this message
    transChCriteriaList
                                           TransChCriteriaList
                                                                                 OPTIONAL
}
TrafficVolumeReportingQuantity ::= SEQUENCE {
    rlc-RB-BufferPayloadAverage ROOLEAN,
    rlc-RB-BufferPayloadVariance
                                          BOOLEAN
TrafficVolumeThreshold ::=
                                      ENUMERATED {
                                           th8, th16, th32, th64, th128,
                                           th256, th512, th1024, th2k, th3k,
                                           th4k, th6k, th8k, th12k, th16k,
                                           th24k, th32k, th48k, th64k, th96k,
                                           th128k, th192k, th256k, th384k, th512k, th768k }
                                      SEQUENCE {
TransChCriteria ::=
    ul-transportChannelID
                                                                                 OPTIONAL,
                                          UL-TrCH-Identity
    eventSpecificParameters
                                          SEQUENCE (SIZE (1..maxMeasParEvent)) OF
                                               TrafficVolumeEventParam OPTIONAL
}
TransChCriteriaList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
                                          TransChCriteria
                                      ENUMERATED {
TransferMode ::=
```

```
acknowledgedModeRLC,
                                        unacknowledgedModeRLC }
TransmittedPowerThreshold ::=
                                    INTEGER (-50..33)
TriggeringCondition1 ::=
                                    ENUMERATED {
                                        activeSetCellsOnly,
                                        monitoredSetCellsOnly,
                                        activeSetAndMonitoredSetCells }
TriggeringCondition2 ::=
                                    ENUMERATED {
                                        activeSetCellsOnly,
                                        monitoredSetCellsOnly,
                                        activeSetAndMonitoredSetCells,
                                        detectedSetCellsOnly,
                                        detectedSetAndMonitoredSetCells }
Tutran-Ganss-DriftRate ::=
                                    ENUMERATED {
                                        ugdr0, ugdr1, ugdr2, ugdr5, ugdr10, ugdr15, ugdr25,
                                        ugdr50, ugdr-1, ugdr-2, ugdr-5, ugdr-10, ugdr-15,
                                        ugdr-25, ugdr-50, spare }
TX-InterruptionAfterTrigger ::=
                                    ENUMERATED {
                                        txiat0-25, txiat0-5, txiat1,
                                        txiat2, txiat4, txiat8, txiat16 }
UDRE ::=
                                    ENUMERATED {
                                        lessThan1,
                                        between1-and-4,
                                        between4-and-8,
                                        over8 }
UE-6AB-Event ::=
                                    SEQUENCE {
                                        TimeToTrigger,
   timeToTrigger
    transmittedPowerThreshold
                                       TransmittedPowerThreshold
UE-6FG-Event ::=
                                    SEQUENCE {
                                       TimeToTrigger,
   timeToTrigger
    -- in 1.28 Mcps TDD ue-RX-TX-TimeDifferenceThreshold corresponds to T_{\text{ADV}} Threshold
   ue-RX-TX-TimeDifferenceThreshold UE-RX-TX-TimeDifferenceThreshold
}
-- dummy and dummy2 are not used in this version of the specification, they should
-- not be sent and if received the UE behaviour is not specified.
UE-AutonomousUpdateMode ::= CHOICE {
   dummy
                                       NULL.
    onWithNoReporting
                                        NULL.
    dummy2
                                        RL-InformationLists
}
                                    CHOICE {
UE-InternalEventParam ::=
                                        UE-6AB-Event,
   event6a
                                        UE-6AB-Event,
   event6c
                                        TimeToTrigger,
   event6d
                                        TimeToTrigger,
    event6e
                                        TimeToTrigger,
                                        UE-6FG-Event,
    event6f
                                        UE-6FG-Event
    event6q
}
UE-InternalEventParamList ::=
                                    SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        UE-InternalEventParam
UE-InternalEventResults ::=
                                    CHOICE {
    event6a
                                        NULL,
    event6b
                                        NULL,
                                        NULL,
    event6c
    event.6d
                                        NULL,
    event.6e
                                        NULL,
                                        PrimaryCPICH-Info,
    event6f
    event6q
                                        PrimaryCPICH-Info,
                                        NULL
    spare
}
UE-InternalMeasQuantity ::=
                                  SEQUENCE {
   measurementQuantity
                                       UE-MeasurementQuantity,
                                                                             DEFAULT fc0
                                        FilterCoefficient
    filterCoefficient
```

```
}
UE-InternalMeasuredResults ::=
                                 SEQUENCE {
   modeSpecificInfo
                                     CHOICE {
       fdd
                                         SEQUENCE {
                                          UE-TransmittedPower
           ue-TransmittedPowerFDD
                                                                       OPTIONAL,
           ue-RX-TX-ReportEntryList
                                             UE-RX-TX-ReportEntryList
                                                                      OPTIONAL
       },
                                          SEQUENCE {
       tdd
           ue-TransmittedPowerTDD-List
                                             UE-TransmittedPowerTDD-List OPTIONAL,
           appliedTA
                                              UL-TimingAdvance
       }
    }
}
UE-TransmittedPowerTDD-List
                                                                       OPTIONAL.
        -- If TA value is not greater than 2047, then use this IE to report.
                                         T-ADVinfo
                                                                        OPTIONAL
}
UE-InternalMeasuredResults-v770ext ::= SEQUENCE {
    modeSpecificInfo
                                      CHOICE {
                                          SEQUENCE {
       tdd384-768
           appliedTA
                                             EXT-UL-TimingAdvance
                                                                       OPTIONAL
       tdd128
                                          SEQUENCE {
           -- If TA value is greater than 2047, then use this IE to report
                                              T-ADVinfo-ext
           t-ADVinfo
                                                                        OPTIONAL
       }
    }
}
UE-InternalMeasurement ::=
    ue-InternalMeasQuantity
                                 SEQUENCE {
                                     UE-InternalMeasQuantity
                                                                        OPTIONAL.
    ue-InternalReportingQuantity
                                      UE-InternalReportingQuantity
                                                                        OPTIONAL,
   reportCriteria
                                     UE-InternalReportCriteria
}
UE-InternalMeasurement-r4 ::=
                                  SEQUENCE {
   ue-InternalMeasQuantity
                                     UE-InternalMeasQuantity
                                                                        OPTIONAL,
                                      UE-InternalReportingQuantity-r4
   ue-InternalReportingQuantity
                                                                        OPTIONAL.
                                      UE-InternalReportCriteria
    reportCriteria
UE-InternalMeasurementSysInfo ::=
                                  SEQUENCE {
   ue-InternalMeasurementID
                                                               DEFAULT 5,
                                     MeasurementIdentity
    ue-InternalMeasQuantity
                                      UE-InternalMeasQuantity
UE-InternalReportCriteria ::=
                                  CHOICE {
                                  UE-InternalReportingCriteria,
   ue-InternalReportingCriteria
    periodicalReportingCriteria
                                      PeriodicalReportingCriteria,
   noReporting
                                      NULL
}
UE-InternalReportingCriteria ::=
                                  SEOUENCE {
   ue-InternalEventParamList
                                   UE-InternalEventParamList
                                                                       OPTIONAL
                                  SEQUENCE {
UE-InternalReportingQuantity ::=
   ue-TransmittedPower
                                      BOOLEAN,
    modeSpecificInfo
                                      CHOICE {
                                          SEQUENCE {
       fdd
           ue-RX-TX-TimeDifference
                                             BOOLEAN
       tdd
                                          SEQUENCE {
           appliedTA
                                             BOOLEAN
    }
}
UE-InternalReportingQuantity-r4 ::= SEQUENCE {
    ue-TransmittedPower
                                      BOOLEAN
    modeSpecificInfo
                                      CHOICE {
                                         SEQUENCE {
       fdd
           ue-RX-TX-TimeDifference
                                             BOOLEAN
```

```
SEQUENCE {
        t.dd
           tddOption
                                              CHOICE {
           -- appliedTA applies to both 3.84 Mcps TDD and to 7.68 Mcps TDD.
           -- Therefore, no additional choice of TDD mode is necessary
               tdd384
                                                  SEQUENCE {
                  appliedTA
                                                      BOOLEAN
               tdd128
                                                 SEQUENCE {
                   t-ADVinfo
                                                      BOOLEAN
           }
       }
}
-- TABULAR: UE-MeasurementQuantity, for 3.84 Mcps TDD only the first two values
-- ue-TransmittedPower and utra-Carrier-RSSI are used.
-- For 1.28 Mcps TDD ue-RX-TX-TimeDifference corresponds to T-ADV in the tabular
UE-MeasurementQuantity ::=
                              ENUMERATED {
                                      ue-TransmittedPower,
                                       utra-Carrier-RSSI,
                                      ue-RX-TX-TimeDifference }
UE-RX-TX-ReportEntry ::= SEQUENCE {
                                      PrimaryCPICH-Info,
   primaryCPICH-Info
    ue-RX-TX-TimeDifferenceType1
                                      UE-RX-TX-TimeDifferenceType1
}
UE-RX-TX-ReportEntryList ::= SEQUENCE (SIZE (1..maxRL)) OF
                                      UE-RX-TX-ReportEntry
-- SPARE: UE-RX-TX-TimeDifferenceType1, Max = 1280
-- Values above Max are spare
UE-RX-TX-TimeDifferenceType1 ::=
                                         INTEGER (768..1791)
UE-RX-TX-TimeDifferenceType2 ::= INTEGER (0..8191)
{\tt UE-RX-TX-TimeDifferenceType2Info} ::= \\ {\tt SEQUENCE} \ \big\{
  ue-RX-TX-TimeDifferenceType2 UE-RX-TX-TimeDifferenceType2,
   neighbourQuality
                                          NeighbourQuality
}
-- In 1.28 Mcps TDD, actual value for
-- T-ADV Threshold = (UE-RX-TX-TimeDifferenceThreshold - 768) * 0.125
UE-RX-TX-TimeDifferenceThreshold ::= INTEGER (768..1280)
UE-TransmittedPower ::=
                                  INTEGER (0..104)
UE-TransmittedPowerTDD-List ::= SEQUENCE (SIZE (1..maxTS)) OF
                                      UE-TransmittedPower
UL-TrCH-Identity ::=
                                       CHOICE{
                                       TransportChannelIdentity,
    -- Note: the reference to CPCH in the element name below is incorrect. The name is not changed
    -- to keep it aligned with R99.
    rachorcpch
                                       NULL,
                                      TransportChannelIdentity
    usch
}
UE-Positioning-Accuracy ::=
                                        BIT STRING (SIZE (7))
                                    SEQUENCE {
BIT STRING (SIZE (1)),
UE-Positioning-CipherParameters ::=
   cipheringKeyFlag
    cipheringSerialNumber
                                      INTEGER (0..65535)
}
UE-Positioning-DGANSSCorrections ::= SEQUENCE {
    dganssreferencetime
                                      INTEGER (0..119),
                                                             -- scale factor 30s
   dganssInfoList
                                      DGANSSInfoList
}
UE-Positioning-Error ::= SEQUENCE {
                                      UE-Positioning-ErrorCause,
   errorReason
   ue-positioning-GPS-additionalAssistanceDataRequest UE-Positioning-GPS-
AdditionalAssistanceDataRequest OPTIONAL
```

```
SEQUENCE {
UE-Positioning-Error-r7 ::=
                                        UE-Positioning-ErrorCause-r7,
    errorReason
   ue-positioning-GPS-additionalAssistanceDataRequest
                                UE-Positioning-GPS-AdditionalAssistanceDataRequest
                                                                                          OPTIONAL.
    ue-positioning-GANSS-additionalAssistanceDataRequest
                                UE-Positioning-GANSS-AdditionalAssistanceDataRequest
                                                                                          OPTIONAL
}
UE-Positioning-ErrorCause ::=
                                     ENUMERATED {
                                        notEnoughOTDOA-Cells,
                                         notEnoughGPS-Satellites,
                                         assistanceDataMissing,
                                         notAccomplishedGPS-TimingOfCellFrames,
                                         undefinedError,
                                         requestDeniedByUser,
                                         notProcessedAndTimeout,
                                         referenceCellNotServingCell }
UE-Positioning-ErrorCause-r7 ::=
                                    ENUMERATED {
                                        notEnoughOTDOA-Cells,
                                         notEnoughGPS-Satellites,
                                         assistanceDataMissing,
                                         notAccomplishedGPS-TimingOfCellFrames,
                                         undefinedError,
                                         requestDeniedByUser,
                                         notProcessedAndTimeout,
                                         referenceCellNotServingCell,
                                         notEnoughGANSS-Satellites,
                                         \verb|notAccomplishedGANSS-TimingOfCellFrames|,\\
                                         spare6, spare5, spare4, spare3, spare2, spare1 }
UE-Positioning-EventParam ::=
                                                 SEQUENCE {
                                         ReportingAmount,
    reportingAmount
    reportFirstFix
                                         BOOLEAN,
    measurementInterval
                                         UE-Positioning-MeasurementInterval,
    eventSpecificInfo
                                         UE-Positioning-EventSpecificInfo
}
UE-Positioning-EventParam-r7 ::=
                                    SEQUENCE {
    reportingAmount
                                        ReportingAmount,
    reportFirstFix
                                         BOOLEAN.
    measurementInterval
                                         UE-Positioning-MeasurementInterval,
    eventSpecificInfo
                                         UE-Positioning-EventSpecificInfo-r7
                                                 SEQUENCE (SIZE (1..maxMeasEvent)) OF
UE-Positioning-EventParamList ::=
                                         UE-Positioning-EventParam
UE-Positioning-EventParamList-r7 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        UE-Positioning-EventParam-r7
UE-Positioning-EventSpecificInfo ::=
                                                 CHOICE {
    e7a
                                         ThresholdPositionChange,
    e7b
                                         ThresholdSFN-SFN-Change,
    e7c
                                         ThresholdSFN-GPS-TOW
UE-Positioning-EventSpecificInfo-r7 ::= CHOICE {
                                         ThresholdPositionChange,
    e7a
    e7b
                                         ThresholdSFN-SFN-Change,
    e7c
                                         ThresholdSFN-GPS-TOW-us,
                                         ThresholdSFN-GANSS-TOW
    e7d
}
UE-Positioning-GANSS-Almanac ::=
                                    SEQUENCE {
    ganss-wk-number
                                         INTEGER (0..255),
                                                                                 OPTIONAL
    alm-keplerianParameters
                                        ALM-keplerianParameters
}
UE-Positioning-GANSS-AdditionalAssistanceDataRequest ::= SEQUENCE {
    ganssReferenceTime
                                        BOOLEAN,
    ganssreferenceLocation
                                        BOOLEAN,
    ganssIonosphericModel
                                        BOOLEAN,
    ganssRequestedGenericAssistanceDataList GanssRequestedGenericAssistanceDataList
UE-Positioning-GANSS-AssistanceData ::= SEQUENCE {
```

```
ue-positioning-GANSS-ReferenceTime UE-Positioning-GANSS-ReferenceTime
                                                                               OPTIONAL,
    uePositioningGanssReferencePosition ReferenceLocationGANSS
                                                                               OPTIONAL,
    uePositioningGanssIonosphericModel UE-Positioning-GANSS-IonosphericModel OPTIONAL,
                                       GANSSGenericDataList
                                                                               OPTIONAL
    ganssGenericDataList
UE-Positioning-GANSS-ClockModel ::= SEQUENCE {
                                     Satellite-clock-modelList
   satellite-clock-modelList
UE-Positioning-GANSS-Data ::= SEQUENCE {
    ganssDataCipheringInfo UE-Positioning-CipherParameters
    ganssDecipheringKeys GANSSDecipheringKeys
    uePositioningGanssReferenceTime UE-Positioning-GANSS-ReferenceTime
                                                                              OPTIONAL.
                                                                               OPTIONAL,
                                                                               OPTIONAL,
    uePositioningGanssReferencePosition ReferenceLocationGANSS
                                                                              OPTIONAL,
    {\tt uePositioningGanssIonosphericModel} \quad {\tt UE-Positioning-GANSS-IonosphericModel} \quad {\tt OPTIONAL},
    ganssGenericDataList
                                       GANSSGenericDataList
                                                                               OPTIONAL
}
UE-Positioning-GANSS-Data-Bit-Assistance ::= SEQUENCE {
    ganss-tod
                                       INTEGER (0..59),
    dataBitAssistanceList
                                       DataBitAssistanceList
}
UE-Positioning-GANSS-IonosphericModel ::= SEQUENCE {
    alpha-zero-ionos BIT STRING (SIZE (12)),
    alpha-one-ionos
                                       BIT STRING (SIZE (12)),
                                      BIT STRING (SIZE (12)),
    alpha-two-ionos
                                      GANSS-Storm-Flag
                                                                          OPTIONAL
    gANSS-storm-flags
}
UE-Positioning-GANSS-MeasuredResults ::= SEQUENCE {
   referenceTime
                                     CHOICE {
       utran-GANSSReferenceTimeResult UTRAN-GANSSReferenceTime,
       ganssReferenceTimeOnly
                                         GANSSReferenceTimeOnly
    ganssGenericMeasurementInfo
                                     GANSSGenericMeasurementInfo
}
UE-Positioning-GANSS-NavigationModel ::= SEQUENCE {
   OPTIONAL,
    ganssSatInfoNavList
                                       Ganss-Sat-Info-NavList
}
UE-Positioning-GANSS-OrbitModel ::= SEQUENCE {
   keplerianParameters
                                      KeplerianParameters
                                                                          OPTIONAL
INTEGER (0..63),
    bad-ganss-satId
    bad-ganss-signalId
                                       BIT STRING (SIZE (8))
                                                                          OPTIONAL
}
UE-Positioning-GANSS-ReferenceMeasurementInfo ::= SEQUENCE {
                                GANSS-Signal-Id
    ganssSignalId
                                                                          OPTIONAL.
    satelliteInformationList
                                      GANSSSatelliteInformationList
{\tt UE-Positioning-GANSS-ReferenceTime} \ ::= \ {\tt SEQUENCE} \ \big\{
    ganssDay
                                       INTEGER (0..8191)
                                                                          OPTIONAL,
    ganssTod
                                       INTEGER (0..86399),
    ganssTodUncertainty
                                       INTEGER (0..127)
                                                                          OPTIONAL.
    ganssTimeId
                                       INTEGER (0..7)
                                                                           OPTIONAL,
    ganssTimeIQ
utran-ganssreferenceTime
                                       SEQUENCE {
        timingOfCellFrames
                                         INTEGER (0..3999999),
                                               CHOICE {
           fdd
                                                  SEQUENCE {
                                                      PrimaryCPICH-Info
               primary-CPICH-Info
                                                   SEQUENCE {
               cellParameters
                                                       CellParametersID
            }
        referenceSfn
                                          INTEGER (0..4095)
          OPTIONAL,
    tutran-ganss-driftRate
                                Tutran-Ganss-DriftRate
                                                                          OPTIONAL
}
```

```
UE-Positioning-GANSS-TimeModel ::= SEQUENCE {
                                   INTEGER (0..37799),
   ganss-timeModelreferenceTime
                                                                               -- scale factor 16s
    ganss-t-a0
                                       INTEGER (-2147483648..2147483647),
                                                                               -- scale factor 2-35
    -- 'ganss-t-al' scale factor 2-51
    ganss-t-a1
                                       INTEGER (-8388608..8388607)
                                                                           OPTIONAL.
    -- 'ganss-t-a2' scale factor 2-68
                                       INTEGER (-64..63)
    ganss-t-a2
                                                                           OPTIONAL.
                                       ENUMERATED { gps, spare7, spare6,
    gnss-to-id
                                           spare5, spare4, spare3, spare2, spare1 },
                                       INTEGER (0..8191)
                                                                           OPTIONAL
   ganss-wk-number
}
UE-Positioning-GANSS-TimeModels ::= SEQUENCE (SIZE (1..maxGANSS-1)) OF
                                       UE-Positioning-GANSS-TimeModel
UE-Positioning-GANSS-UTCModel ::= SEQUENCE {
                                       BIT STRING (SIZE (24)),
    a-one-utc
   a-zero-utc
                                       BIT STRING (SIZE (32)),
                                       BIT STRING (SIZE (8)),
    t-ot-utc
                                       BIT STRING (SIZE (8)),
   delta-t-ls-utc
    w-n-t-utc
                                      BIT STRING (SIZE (8)),
    w-n-lsf-utc
                                       BIT STRING (SIZE (8)),
                                       BIT STRING (SIZE (8)),
   dn-ut.c
    delta-t-lsf-utc
                                       BIT STRING (SIZE (8))
}
UE-Positioning-GPS-AcquisitionAssistance ::=
                                               SEQUENCE {
   utran-GPSReferenceTime GPS-TOW-1msec,
                                      UTRAN-GPSReferenceTime
                                                                     OPTIONAL,
    satelliteInformationList
                                      AcquisitionSatInfoList
}
UE-Positioning-GPS-AcquisitionAssistance-v770ext ::= SEQUENCE {
    ue-Positioning-GPS-ReferenceTimeUncertainty
                                       UE-Positioning-GPS-ReferenceTimeUncertainty
                                                                                      OPTIONAL
}
{\tt UE-Positioning-GPS-AcquisitionAssistance-r7} \ ::= \ {\tt SEQUENCE} \ \big\{
    gps-ReferenceTime
                                      GPS-TOW-1msec,
    utran-GPSReferenceTime
                                       UTRAN-GPSReferenceTime
                                                                      OPTIONAL,
    ue-Positioning-GPS-ReferenceTimeUncertainty
                                       UE-Positioning-GPS-ReferenceTimeUncertainty OPTIONAL,
    satelliteInformationList
                                       AcquisitionSatInfoList
}
UE-Positioning-GPS-AdditionalAssistanceDataRequest ::=
                                                          SEQUENCE {
    {\tt almanacRequest}
                                      BOOLEAN,
    utcModelRequest
                                       BOOLEAN,
    ionosphericModelRequest
                                      BOOLEAN,
    navigationModelRequest
                                      BOOLEAN,
    dgpsCorrectionsRequest
                                      BOOLEAN,
                                     BOOLEAN,
    referenceLocationRequest
    referenceTimeRequest
                                       BOOLEAN,
                                     BOOLEAN,
    aquisitionAssistanceRequest
    realTimeIntegrityRequest
                                      BOOLEAN,
    navModelAddDataRequest
                                       UE-Positioning-GPS-NavModelAddDataReq
                                                                                   OPTIONAL
}
UE-Positioning-GPS-Almanac ::=
                                               SEQUENCE {
                                     BIT STRING (SIZE (8)),
    wn-a
                                       AlmanacSatInfoList,
    almanacSatInfoList
    sv-GlobalHealth
                                       BIT STRING (SIZE (364))
                                                                         OPTIONAL
}
UE-Positioning-GPS-AssistanceData ::= SEQUENCE {
    ue-positioning-GPS-ReferenceTime
                                           UE-Positioning-GPS-ReferenceTime
                                                                                       OPTIONAL,
    ue-positioning-GPS-ReferenceLocation
                                           ReferenceLocation
                                                                                       OPTIONAL,
    ue-positioning-GPS-DGPS-Corrections
                                           UE-Positioning-GPS-DGPS-Corrections
                                                                                       OPTIONAL,
                                           UE-Positioning-GPS-NavigationModel
    ue-positioning-GPS-NavigationModel
                                                                                       OPTIONAL,
    ue-positioning-GPS-IonosphericModel
                                           UE-Positioning-GPS-IonosphericModel
                                                                                      OPTIONAL,
    ue-positioning-GPS-UTC-Model
                                           UE-Positioning-GPS-UTC-Model
                                                                                       OPTIONAL.
    ue-positioning-GPS-Almanac
                                           UE-Positioning-GPS-Almanac
                                                                                       OPTIONAL,
    ue-positioning-GPS-AcquisitionAssistance
                                           UE-Positioning-GPS-AcquisitionAssistance
                                                                                       OPTIONAL,
    ue-positioning-GPS-Real-timeIntegrity BadSatList
                                                                                       OPTIONAL,
    -- dummy is not used in this version of the specification, it should
```

```
-- not be sent and if received it should be ignored.
             UE-Positioning-GPS-ReferenceCellInfo
    dummy
                                                                    OPTIONAL
}
UE-Positioning-GPS-AssistanceData-v770ext ::= SEQUENCE {
    ue-positioning-GPS-ReferenceTime UE-Positioning-GPS-ReferenceTime-v770ext
    ue-positioning-GPS-AcquisitionAssistance
                                      UE-Positioning-GPS-AcquisitionAssistance-v770ext
                                                                                              OPTIONAL
}
{\tt UE-Positioning-GPS-AssistanceData-r7} \ ::= \ {\tt SEQUENCE} \ \big\{
    ue-positioning-GPS-ReferenceTime
ue-positioning-GPS-ReferenceLocation
                                              UE-Positioning-GPS-ReferenceTime-r7
                                                                                              OPTIONAL.
                                                                                             OPTIONAL,
                                              ReferenceLocation
    ue-positioning-GPS-DGPS-CorrectionsUE-Positioning-GPS-DGPS-Correctionsue-positioning-GPS-NavigationModelUE-Positioning-GPS-NavigationModelue-positioning-GPS-IonosphericModelUE-Positioning-GPS-IonosphericModel
                                                                                             OPTIONAL,
                                                                                             OPTIONAL,
                                                                                             OPTIONAL,
    ue-positioning-GPS-UTC-Model
                                              UE-Positioning-GPS-UTC-Model
                                                                                             OPTIONAL.
    ue-positioning-GPS-Almanac
                                              UE-Positioning-GPS-Almanac
                                                                                             OPTIONAL.
    ue-positioning-GPS-AcquisitionAssistance
                                              UE-Positioning-GPS-AcquisitionAssistance-r7 OPTIONAL,
    ue-positioning-GPS-Real-timeIntegrity BadSatList
                                                                                              OPTIONAL
}
UE-Positioning-GPS-DGPS-Corrections ::=
                                             SEQUENCE {
    gps-TOW
                                          GPS-TOW-1sec.
    statusHealth
                                          DiffCorrectionStatus,
    dgps-CorrectionSatInfoList
                                          DGPS-CorrectionSatInfoList
UE-Positioning-GPS-IonosphericModel ::=
                                              SEOUENCE {
    alfa0
                                          BIT STRING (SIZE (8)),
                                          BIT STRING (SIZE (8)),
    alfa2
                                          BIT STRING (SIZE (8)),
                                          BIT STRING (SIZE (8)),
    alfa3
    beta0
                                          BIT STRING (SIZE (8)),
    beta1
                                          BIT STRING (SIZE (8)),
                                          BIT STRING (SIZE (8)),
    beta2
                                          BIT STRING (SIZE (8))
    beta3
}
UE-Positioning-GPS-MeasurementResults ::=
                                                   SEQUENCE {
   referenceTime
                                         CHOICE {
        utran-GPSReferenceTimeResult
                                              UTRAN-GPSReferenceTimeResult,
        gps-ReferenceTimeOnly
                                              GPS-TOW-1msec
    gps-MeasurementParamList
                                         GPS-MeasurementParamList
}
UE-Positioning-GPS-MeasurementResults-v770ext ::= SEQUENCE {
    ue-Positioning-GPS-ReferenceTimeUncertainty
                                          UE-Positioning-GPS-ReferenceTimeUncertainty
                                                                                             OPTIONAL
}
UE-Positioning-GPS-NavigationModel ::=
                                                   SEQUENCE {
                                          NavigationModelSatInfoList
    navigationModelSatInfoList
}
UE-Positioning-GPS-NavModelAddDataReq ::=
                                                  SEQUENCE {
    qps-Week
                                          INTEGER (0..1023),
    -- SPARE: gps-Toe, Max = 167
    -- Values above Max are spare
                                          INTEGER (0..255),
    qps-Toe
    -- SPARE: tToeLimit, Max = 10
    -- Values above Max are spare
                                          INTEGER (0..15),
    tToeLimit
    satDataList
                                          SatDataList
}
UE-Positioning-GPS-ReferenceCellInfo ::=
                                                   SEOUENCE {
                         CHOICE {
    modeSpecificInfo
        fdd
                                        SEQUENCE {
            referenceIdentity
                                            PrimaryCPICH-Info
        tdd
                                        SEQUENCE {
            referenceIdentity
                                              CellParametersID
    }
}
```

```
UE-Positioning-GPS-ReferenceTime ::= SEQUENCE {
   gps-Week
                                      INTEGER (0..1023),
    gps-tow-1msec
                                       GPS-TOW-1msec,
    utran-GPSReferenceTime sfn-tow-Uncertainty SFN-TOW-Uncertainty
                                                                      OPTIONAL,
    utran-GPS-DriftRate
                                       UTRAN-GPS-DriftRate
                                                                           OPTIONAL,
    gps-TOW-AssistList
                                       GPS-TOW-AssistList
                                                                           OPTIONAL
}
UE-Positioning-GPS-ReferenceTime-v770ext ::= SEQUENCE {
    ue-Positioning-GPS-ReferenceTimeUncertainty
                                        UE-Positioning-GPS-ReferenceTimeUncertainty OPTIONAL
}
UE-Positioning-GPS-ReferenceTime-r7 ::= SEQUENCE {
                                        INTEGER (0..1023),
    qps-Week
    gps-tow-1msec
                                        GPS-TOW-1msec,
    utran-GPSReferenceTime
                                       UTRAN-GPSReferenceTime
   ue-Positioning-GPS-ReferenceTimeUncertainty
                          UE-Positioning-GPS-ReferenceTimeUncertainty
                                                                                        OPTIONAL,
    sfn-tow-Uncertainty
                                       SFN-TOW-Uncertainty
                                                                           OPTIONAL,
    utran-GPS-DriftRate
                                        UTRAN-GPS-DriftRate
                                                                            OPTIONAL,
    gps-TOW-AssistList
                                       GPS-TOW-AssistList
                                                                            OPTIONAL
}
UE-Positioning-GPS-ReferenceTimeUncertainty ::= INTEGER (0..127)
UE-Positioning-GPS-UTC-Model ::=
                                                SEOUENCE {
                                       BIT STRING (SIZE (24)),
    a1
    a0
                                        BIT STRING (SIZE (32)),
                                       BIT STRING (SIZE (8)),
    t-ot
    wn-t
                                       BIT STRING (SIZE (8)),
                                       BIT STRING (SIZE (8)),
    delta-t-LS
    wn-1sf
                                       BIT STRING (SIZE (8)),
    dn
                                        BIT STRING (SIZE (8)),
                                       BIT STRING (SIZE (8))
    delta-t-LSF
}
UE-Positioning-IPDL-Parameters ::=
                                                SEQUENCE {
    ip-Spacing
                                        IP-Spacing,
    ip-Length
                                        IP-Length,
                                        INTEGER (0..9),
    ip-Offset
    seed
                                        INTEGER (0..63),
    burstModeParameters
                                        BurstModeParameters
                                                                  OPTIONAL
}
UE-Positioning-IPDL-Parameters-r4 ::=
                                                SEQUENCE {
    modeSpecificInfo
                                        CHOICE {
                                           SEQUENCE {
        fdd
                                                IP-Spacing,
           ip-Spacing
            ip-Length
                                                IP-Length,
            ip-Offset
                                                INTEGER (0..9),
                                                INTEGER (0..63)
            seed
        },
        t.dd
                                            SEQUENCE {
           ip-Spacing-TDD
                                               IP-Spacing-TDD,
            ip-slot
                                                INTEGER (0..14),
            ip-Start
                                                INTEGER (0..4095),
            ip-PCCPCG
                                                TP-PCCPCH-r4
                                                                        OPTIONAL
    burstModeParameters
                                       BurstModeParameters
                                                                        OPTIONAL
}
UE-Positioning-IPDL-Parameters-TDD-r4-ext ::= SEQUENCE {
    ip-Spacing
                                       IP-Spacing-TDD,
    ip-slot
                                        INTEGER (0..14),
                                        INTEGER (0..4095),
    ip-Start
    ip-PCCPCG
                                        IP-PCCPCH-r4
                                                                        OPTIONAL.
    burstModeParameters
                                       BurstModeParameters
}
UE-Positioning-MeasuredResults ::= SEQUENCE {
    ue-positioning-OTDOA-Measurement UE-Positioning-OTDOA-Measurement
    -- Extended 'ue-positioning-PositionEstimateInfo' information may be provided using IE
    -- 'UE-Positioning-PositionEstimateInfo-v770ext' in IE 'UE-Positioning-MeasuredResults-v770ext'.
    ue-positioning-PositionEstimateInfo UE-Positioning-PositionEstimateInfo
                                                                                       OPTIONAL,
```

```
OPTIONAL,
    ue-positioning-GPS-Measurement
                                         UE-Positioning-GPS-MeasurementResults
    -- The 'ue-positioning-Error' information may be provided using IE 'UE-Positioning-Error-r7' in
    -- IE 'UE-Positioning-MeasuredResults-v770ext'.
    -- If IE 'UE-Positioning-Error-r7' is present, the corresponding IE 'UE-Positioning-Error' shall
    -- be excluded.
    ue-positioning-Error
                                           UE-Positioning-Error
                                                                                      OPTIONAL
}
UE-Positioning-MeasuredResults-v770ext ::= SEQUENCE {
    ue-positioning-PositionEstimateInfo UE-Positioning-PositionEstimateInfo-v770ext OPTIONAL,
    ue-positioning-GPS-Measurement
                                          UE-Positioning-GPS-MeasurementResults-v770ext
                                                                                      OPTIONAL.
                                                                                      OPTIONAL,
    ue-positioning-Error
                                           UE-Positioning-Error-r7
    OPTIONAL
}
UE-Positioning-MeasuredResults-v390ext ::=
                                               SEOUENCE {
    ue-Positioning-OTDOA-Measurement-v390ext
                                                  UE-Positioning-OTDOA-Measurement-v390ext
                                       SEQUENCE {
UE-Positioning-Measurement ::=
    \hbox{\tt ue-positioning-ReportingQuantity}
                                           UE-Positioning-ReportingQuantity,
                                           UE-Positioning-ReportCriteria,
    reportCriteria
                                          UE-Positioning-OTDOA-AssistanceData
    ue-positioning-OTDOA-AssistanceData
                                                                                      OPTIONAL.
   ue-positioning-GPS-AssistanceData
                                          UE-Positioning-GPS-AssistanceData
                                                                                          OPTIONAL
}
UE-Positioning-Measurement-v390ext ::= SEQUENCE {
   ue-positioning-ReportingQuantity-v390ext
                                           UE-Positioning-ReportingQuantity-v390ext
                                                                                      OPTIONAL.
    measurementValidity
                                           MeasurementValidity
                                                                                      OPTIONAL.
    ue-positioning-OTDOA-AssistanceData-UEB UE-Positioning-OTDOA-AssistanceData-UEB
                                                                                      OPTIONAL
}
UE-Positioning-Measurement-r4 ::=
                                       SEQUENCE {
    ue-positioning-ReportingQuantity
                                           UE-Positioning-ReportingQuantity-r4,
    measurementValidity
                                           MeasurementValidity
                                                                                  OPTIONAL,
    reportCriteria
                                           UE-Positioning-ReportCriteria,
    ue-positioning-OTDOA-AssistanceData
                                           UE-Positioning-OTDOA-AssistanceData-r4
    OPTIONAL,
    ue-positioning-GPS-AssistanceData
                                           UE-Positioning-GPS-AssistanceData
                                                                                          OPTIONAL
}
UE-Positioning-Measurement-r7 ::=
                                       SEQUENCE {
    ue-positioning-ReportingQuantity
                                           UE-Positioning-ReportingQuantity-r7,
    measurementValidity
                                           MeasurementValidity
                                                                                  OPTIONAL,
    reportCriteria
                                           UE-Positioning-ReportCriteria-r7,
    ue-positioning-OTDOA-AssistanceData
                                           UE-Positioning-OTDOA-AssistanceData-r7 OPTIONAL,
    ue-positioning-GPS-AssistanceData
                                           UE-Positioning-GPS-AssistanceData-r7
                                                                                  OPTIONAL,
    ue-positioning-GANSS-AssistanceData
                                          UE-Positioning-GANSS-AssistanceData
}
UE-Positioning-MeasurementEventResults ::= CHOICE {
    -- In case of 'event7a' reporting, if IE 'UE-Positioning-PositionEstimateInfo' is not needed,
    -- CHOICE shall be set to 'additionalOrReplacedPosMeasEvent'and the 'event7a' shall be included
    -- in IE 'UE-Positioning-MeasurementEventResults-v770ext'.
    event7a
                                       UE-Positioning-PositionEstimateInfo,
    event7b
                                       UE-Positioning-OTDOA-Measurement,
                                       UE-Positioning-GPS-MeasurementResults,
    -- If CHOICE is set to 'additionalOrReplacedPosMeasEvent',
    -- IE 'UE-Positioning-MeasurementEventResults-v770ext' shall be present.
    additionalOrReplacedPosMeasEvent
                                      NULL
}
UE-Positioning-MeasurementEventResults-v770ext ::= CHOICE {
    event.7a
                                       UE-Positioning-PositionEstimateInfo-v770ext,
    event7c
                                       UE-Positioning-GPS-MeasurementResults-v770ext,
    event7d
                                       UE-Positioning-GANSS-MeasuredResults,
    spare
                                       NULL
}
UE-Positioning-MeasurementInterval ::=
                                               ENUMERATED {
                                       e5, e15, e60, e300,
                                       e900, e1800, e3600, e7200 }
UE-Positioning-MethodType ::=
                                               ENUMERATED {
                                       ue-Assisted.
                                       ue-Based,
```

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ue-BasedPreferred,
                                        ue-AssistedPreferred }
UE-Positioning-OTDOA-AssistanceData ::=
                                           SEOUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo
                                                  UE-Positioning-OTDOA-ReferenceCellInfo
    ue-positioning-OTDOA-NeighbourCellList
                                                       UE-Positioning-OTDOA-NeighbourCellList
        OPTIONAL
}
UE-Positioning-OTDOA-AssistanceData-r4 ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo
                                                   UE-Positioning-OTDOA-ReferenceCellInfo-r4
       OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList
                                                   UE-Positioning-OTDOA-NeighbourCellList-r4
        OPTIONAL
}
UE-Positioning-OTDOA-AssistanceData-r4ext ::= SEQUENCE {
    -- In case of TDD these IPDL parameters shall be used for the reference cell instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-ReferenceCellInfo
    ue-Positioning-IPDL-Parameters-TDD-r4-ext
                                                   UE-Positioning-IPDL-Parameters-TDD-r4-ext
   OPTIONAL,
    -- These IPDL parameters shall be used for the neighbour cells in case of TDD instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-NeighbourCellInfoList. The cells shall be
    -- listed in the same order as in IE UE-Positioning-OTDOA-NeighbourCellInfoList
    ue-Positioning-IPDL-Parameters-TDDList-r4-ext UE-Positioning-IPDL-Parameters-TDDList-r4-ext
    OPTIONAL
}
UE-Positioning-OTDOA-AssistanceData-UEB ::=
                                               SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo-UEB
                                        UE-Positioning-OTDOA-ReferenceCellInfo-UEB
                                                                                        OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList-UEB
                                        UE-Positioning-OTDOA-NeighbourCellList-UEB
                                                                                        OPTIONAL
}
UE-Positioning-OTDOA-AssistanceData-UEB-ext ::= SEQUENCE {
   ue-positioning-OTDOA-ReferenceCellInfo-UEB-ext
                                        UE-Positioning-OTDOA-ReferenceCellInfo-UEB-ext OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList-UEB-ext
                                       UE-Positioning-OTDOA-NeighbourCellList-UEB-ext OPTIONAL
}
UE-Positioning-OTDOA-AssistanceData-r7 ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo UE-Positioning-OTDOA-ReferenceCellInfo-r7
    ue-positioning-OTDOA-NeighbourCellList UE-Positioning-OTDOA-NeighbourCellList-r7
UE-Positioning-IPDL-Parameters-TDDList-r4-ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                           UE-Positioning-IPDL-Parameters-TDD-r4-ext
UE-Positioning-OTDOA-MeasuredResultsTDD-ext ::= SEQUENCE {
    neighbourList
                                       NeighbourList-TDD-r7
                                                                               OPTIONAL
                                               SEQUENCE {
UE-Positioning-OTDOA-Measurement ::=
    sfn
                                       INTEGER (0..4095),
    modeSpecificInfo
                                   CHOICE {
                                       SEQUENCE {
        fdd
                                                PrimarvCPICH-Info,
            referenceCellIDentity
            ue-RX-TX-TimeDifferenceType2Info
                                               UE-RX-TX-TimeDifferenceType2Info
        tdd
                                           SEQUENCE {
           referenceCellIdentity
                                           CellParametersID
                                       NeighbourList
                                                                            OPTIONAL
    neighbourList
}
UE-Positioning-OTDOA-Measurement-v390ext ::=
                                                       SEQUENCE {
    neighbourList-v390ext
                                               NeighbourList-v390ext
}
UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
                     CHOICE {
    modeSpecificInfo
        fdd
           primaryCPICH-Info
                                                PrimaryCPICH-Info
```

```
SEQUENCE {
        t.dd
            cellAndChannelIdentity
                                                CellAndChannelIdentity
        }
    frequencyInfo
                                        FrequencyInfo
                                                                             OPTIONAL,
    ue-positioning-IPDL-Paremeters
                                                    UE-Positioning-IPDL-Parameters
    OPTIONAL,
    sfn-SFN-RelTimeDifference
                                        SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift
                                        SFN-SFN-Drift
                                                                            OPTIONAL,
    searchWindowSize
                                        OTDOA-SearchWindowSize,
   positioningMode
                        CHOICE {
                                                SEQUENCE {},
SEQUENCE {}
        ueBased
        ueAssisted
}
UE-Positioning-OTDOA-NeighbourCellInfo-r4 ::= SEQUENCE {
    modeSpecificInfo
                      CHOICE {
                                        SEQUENCE {
        fdd
           primaryCPICH-Info
                                                PrimaryCPICH-Info
        },
        tdd
                                        SEQUENCE {
            cellAndChannelIdentity
                                                CellAndChannelIdentity
    frequencyInfo
                                        FrequencyInfo
                                                                             OPTIONAL,
    ue-positioning-IPDL-Paremeters
                                       UE-Positioning-IPDL-Parameters-r4 OPTIONAL,
    sfn-SFN-RelTimeDifference
                                        SFN-SFN-RelTimeDifference1,
    sfn-Offset-Validity
                                       SFN-Offset-Validity
                                                                            OPTIONAL,
    sfn-SFN-Drift
                                        SFN-SFN-Drift
                                                                            OPTIONAL,
    searchWindowSize
                                        OTDOA-SearchWindowSize,
                      CHOICE {
    positioningMode
        ueBased
                                                SEQUENCE {
            relativeNorth
                                                INTEGER (-20000..20000)
                                                                                     OPTIONAL.
                                                INTEGER (-20000..20000)
            relativeEast
                                                                                     OPTIONAL,
            relativeAltitude
                                                INTEGER (-4000..4000)
                                                                                     OPTIONAL,
            fineSFN-SFN
                                                FineSFN-SFN
                                                                                    OPTIONAL,
            -- actual value roundTripTime = (IE value * 0.0625) + 876
                                                INTEGER (0.. 32766)
                                                                                     OPTIONAL
            roundTripTime
        ueAssisted
                                                SEQUENCE {}
    }
}
UE-Positioning-OTDOA-NeighbourCellInfo-UEB ::= SEQUENCE {
   modeSpecificInfo CHOICE {
                                        SEOUENCE {
       fdd
            primaryCPICH-Info
                                                PrimaryCPICH-Info
        tdd
                                        SEQUENCE {
            cellAndChannelIdentity
                                                CellAndChannelIdentity
        }
    frequencyInfo
                                        FrequencyInfo
                                                                             OPTIONAL.
    ue-positioning-IPDL-Paremeters
                                        UE-Positioning-IPDL-Parameters
                                                                             OPTIONAL,
    sfn-SFN-RelTimeDifference
                                        SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift
                                        SFN-SFN-Drift
                                                                             OPTIONAL,
    searchWindowSize
                                        OTDOA-SearchWindowSize,
    relativeNorth
                                        INTEGER (-20000..20000)
                                                                             OPTIONAL,
   relativeEast
                                        INTEGER (-20000 20000)
                                                                             OPTIONAL.
    relativeAltitude
                                        INTEGER (-4000..4000)
                                                                             OPTIONAL,
    fineSFN-SFN
                                        FineSFN-SFN,
    -- actual value roundTripTime = (IE value * 0.0625) + 876
    roundTripTime
                                        INTEGER (0..32766)
                                                                             OPTIONAL
}
UE-Positioning-OTDOA-NeighbourCellInfo-UEB-ext ::= SEQUENCE {
    -- actual value roundTripTimeExtension = (IE value * 0.0625)
    {\tt roundTripTimeExtension}
                                        INTEGER (0..70274)
                                                                             OPTIONAL
}
UE-Positioning-OTDOA-NeighbourCellInfo-r7 ::= SEQUENCE {
   modeSpecificInfo
                                       CHOICE {
                                            SEQUENCE {
        fdd
            primaryCPICH-Info
                                                PrimaryCPICH-Info
        t.dd
                                            SEQUENCE {
            cellAndChannelIdentity
                                                CellAndChannelIdentity
```

```
}
        FrequencyInfo OPTIONAL, ue-positioning-IPDL-Paremeters UE-Positioning-IPDL-Parameters-r4 OPTIONAL, sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference1, sfn-Offset-Validity
        sfn-SFN-Drift
                                                                                 SFN-SFN-Drift
                                                                                                                                                             OPTIONAL,
        searchWindowSize
                                                                                  OTDOA-SearchWindowSize,
        positioningMode
                                                                                  CHOICE {
               ueBased
                                                                                           SEQUENCE {
                                                                                                  INTEGER (-20000..20000)
INTEGER (-20000..20000)
                       relativeNorth
                                                                                                                                                                               OPTIONAL,
                        relativeEast
                                                                                                                                                                               OPTIONAL.
                                                                                                   INTEGER (-4000..4000)
                        relativeAltitude
                                                                                                                                                                               OPTIONAL.
                        fineSFN-SFN
                                                                                                   FineSFN-SFN
                                                                                                                                                                              OPTIONAL,
                         -- actual value roundTripTime = (IE value * 0.0625) + 876
                                                                                                 INTEGER (0.. 32766)
                        roundTripTime
                                                                                                                                                                             OPTIONAL,
                         -- actual value roundTripTimeExtension = (IE value * 0.0625)
                        roundTripTimeExtension
                                                                                                  INTEGER (0..70274)
                                                                                                                                                                              OPTIONAL
                ueAssisted
                                                                                           SEQUENCE {}
        }
}
UE-Positioning-OTDOA-NeighbourCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                                           UE-Positioning-OTDOA-NeighbourCellInfo
UE-Positioning-OTDOA-NeighbourCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                                                   UE-Positioning-OTDOA-NeighbourCellInfo-r4
UE-Positioning-OTDOA-NeighbourCellList-UEB ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                                           UE-Positioning-OTDOA-NeighbourCellInfo-UEB
-- The order of the list corresponds to the order of UE-Positioning-OTDOA-NeighbourCellInfo-UEB
-- in UE-Positioning-OTDOA-NeighbourCellList-UEB
UE-Positioning-OTDOA-NeighbourCellList-UEB-ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                                  UE-Positioning-OTDOA-NeighbourCellInfo-UEB-ext
{\tt UE-Positioning-OTDOA-NeighbourCellList-r7} \ ::= \ {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxCellMeas})) \ {\tt OF} \ {\tt O
                                                                                                   UE-Positioning-OTDOA-NeighbourCellInfo-r7
UE-Positioning-OTDOA-Quality ::=
                                                                                           SEQUENCE {
       stdResolution
                                                                              BIT STRING (SIZE (2)),
        numberOfOTDOA-Measurements
                                                                               BIT STRING (SIZE (3)),
        stdOfOTDOA-Measurements
                                                                                 BIT STRING (SIZE (5))
}
UE-Positioning-OTDOA-ReferenceCellInfo ::=
                                                                                                          SEOUENCE {
                                                                                  INTEGER (0..4095)
        OPTIONAL,
        modeSpecificInfo CHOICE {
                                                                                                    SEQUENCE {
                fdd
                      primaryCPICH-Info
                                                                                                    PrimaryCPICH-Info
                t.dd
                                                                                                   SEQUENCE {
                       cellAndChannelIdentity
                                                                                                   CellAndChannelIdentity
                }
        frequencyInfo
                                                                               FrequencyInfo
                                                                                                                                                           OPTIONAL,
        positioningMode CHOICE {
                                                                                                    SEQUENCE {},
                ueBased
                                                                                                   SEQUENCE {}
                ueAssisted
        ue-positioning-IPDL-Paremeters
                                                                                                   UE-Positioning-IPDL-Parameters OPTIONAL
}
UE-Positioning-OTDOA-ReferenceCellInfo-r4 ::= SEQUENCE {
                                                                                   INTEGER (0..4095)
        sfn
        OPTIONAL,
        modeSpecificInfo CHOICE {
                                                                                                   SEQUENCE {
                fdd
                                                                                                   PrimaryCPICH-Info
                       primaryCPICH-Info
                tdd
                                                                                                   SEOUENCE {
                        cellAndChannelIdentity
                                                                                                   CellAndChannelIdentity
        frequencyInfo
                                                                               FrequencyInfo
                                                                                                                                                           OPTIONAL.
        positioningMode CHOICE {
```

```
SEQUENCE {
       ueBased
                                                      ReferenceCellPosition OPTIONAL,
           cellPosition
           -- actual value roundTripTime = (IE value * 0.0625) + 876
                                              INTEGER (0..32766)
                                                                             OPTIONAL
           roundTripTime
       ueAssisted
                                              SEQUENCE {}
                                             UE-Positioning-IPDL-Parameters-r4 OPTIONAL
   ue-positioning-IPDL-Paremeters
}
UE-Positioning-OTDOA-ReferenceCellInfo-UEB ::=
                                                      SEQUENCE {
                                      INTEGER (0..4095)
                                                                          OPTIONAL,
   modeSpecificInfo CHOICE {
       fdd
                                              SEQUENCE {
         primaryCPICH-Info
                                              PrimaryCPICH-Info
       tdd
                                              SEOUENCE {
           cellAndChannelIdentity
                                              CellAndChannelIdentity
   frequencyInfo
                                      FrequencyInfo
                                                                         OPTIONAL.
                                      ReferenceCellPosition
   cellPosition
                                                                         OPTIONAL,
    -- actual value roundTripTime = (IE value * 0.0625) + 876
                                      INTEGER (0..32766)
   roundTripTime
                                                                         OPTIONAL.
   ue-positioning-IPDL-Paremeters
                                      UE-Positioning-IPDL-Parameters
                                                                         OPTIONAL
}
UE-Positioning-OTDOA-ReferenceCellInfo-UEB-ext ::= SEQUENCE {
   -- actual value roundTripTimeExtension = (IE value * 0.0625)
   roundTripTimeExtension
                                     INTEGER (0..70274)
                                                                         OPTIONAL.
}
UE-Positioning-OTDOA-ReferenceCellInfo-r7 ::= SEQUENCE {
                                      INTEGER (0..4095)
                                                                         OPTIONAL.
   modeSpecificInfo
                                       CHOICE {
       fdd
                                          SEQUENCE {
         primaryCPICH-Info
                                              PrimaryCPICH-Info
                                          SEOUENCE {
       tdd
           cellAndChannelIdentity
                                             CellAndChannelIdentity
   frequencyInfo
                                       FrequencyInfo
                                                                        OPTIONAL.
   positioningMode
                                       CHOICE {
       ueBased
                                          SEQUENCE {
           cellPosition
                                              ReferenceCellPosition
                                                                             OPTIONAL,
           -- actual value roundTripTime = (IE value * 0.0625) + 876
           roundTripTime
                                              INTEGER (0..32766)
                                                                             OPTIONAL,
           -- actual value roundTripTimeExtension = (IE value * 0.0625)
           roundTripTimeExtension INTEGER (0..70274)
                                          SEQUENCE {}
       ueAssisted
   ue-positioning-IPDL-Paremeters UE-Positioning-IPDL-Parameters-r4 OPTIONAL
}
UE-Positioning-PositionEstimateInfo ::= SEQUENCE {
   referenceTime
                                      CHOICE {
                                          UTRAN-GPSReferenceTimeResult,
       utran-GPSReferenceTimeResult
                                          GPS-TOW-1msec,
       gps-ReferenceTimeOnly
                                          SEQUENCE {
       cell-Timing
           sfn
                                                      INTEGER (0..4095),
           modeSpecificInfo
                                           CHOICE {
                                                  SEQUENCE {
               fdd
                                                      PrimaryCPICH-Info
                   primaryCPICH-Info
               tdd
                                                  SEQUENCE {
                   cellAndChannelIdentity
                                                      CellAndChannelIdentity
           }
       }
   positionEstimate
                                      PositionEstimate
}
UE-Positioning-PositionEstimateInfo-v770ext ::= SEQUENCE {
   referenceTimeOptions
                                      CHOICE {
       -- If 'earlier-than-r7', IE 'UE-Positioning-PositionEstimateInfo' shall be included.
```

```
earlier-than-r7
                                          NULL,
        -- If 'r7', the corresponding IE 'UE-Positioning-PositionEstimateInfo' shall be excluded.
                                         SEQUENCE {
                                              CHOICE {
           referenceTime
                                               UTRAN-GANSSReferenceTime,
               utran-GANSSReferenceTimeResult
               ganssReferenceTimeOnly
                                                  GANSSReferenceTimeOnly
           positionEstimate
                                               PositionEstimate
        }
    },
   positionData
                                      BIT STRING (SIZE (16)),
    velocityEstimate
                                       VelocityEstimate
                                                                           OPTIONAL.
    ue-Positioning-GPS-ReferenceTimeUncertainty
                             UE-Positioning-GPS-ReferenceTimeUncertainty OPTIONAL
}
UE-Positioning-ReportCriteria ::=
   rositioning-ReportCriteria ::= CHOICE {
   ue-positioning-ReportingCriteria UE-Positioning-E
   periodicalReportingCriteria,
   noReporting
                                             CHOICE {
                                                  UE-Positioning-EventParamList,
   noReporting
}
UE-Positioning-ReportCriteria-r7 ::=
                                      CHOICE {
                                       UE-Positioning-EventParamList-r7,
   ue-positioning-ReportingCriteria
    periodicalReportingCriteria
                                           PeriodicalReportingCriteria,
    noReporting
                                           NULL
UE-Positioning-ReportingQuantity ::=
                                               SEQUENCE {
   positioningMethod
                                      UE-Positioning-MethodType,
                                       PositioningMethod,
    -- dummy1 is not used in this version of specification and it should
    -- be ignored.
    dummy1
                                       UE-Positioning-ResponseTime,
   gps-TimingOfCellWanted
                                       UE-Positioning-Accuracy
                                                                          OPTIONAL.
                                       BOOLEAN,
    -- dummy2 is not used in this version of specification and it should
    -- be ignored.
                                      BOOLEAN,
   dummv2
    additionalAssistanceDataRequest BOOLEAN,
    environmentCharacterisation
                                       EnvironmentCharacterisation
                                                                         OPTIONAL
}
UE-Positioning-ReportingQuantity-v390ext ::=
                                                 SEQUENCE {
   vertical-Accuracy
                                               UE-Positioning-Accuracy
}
UE-Positioning-ReportingQuantity-r4 ::=
                                             SEQUENCE {
   positioningMethod
                                      UE-Positioning-MethodType,
                                       PositioningMethod,
   horizontalAccuracy
                                       UE-Positioning-Accuracy
                                                                           OPTIONAL,
                                      UE-Positioning-Accuracy
    verticalAccuracy
                                                                          OPTIONAL.
    gps-TimingOfCellWanted
                                      BOOLEAN,
    additionalAssistanceDataReq
                                      BOOLEAN.
                                 BOOLEAN,
EnvironmentCharacterisation
    environmentCharacterisation
                                                                         OPTIONAL
}
UE-Positioning-ReportingQuantity-r7 ::= SEQUENCE {
   methodType
   positioningMethod
                                       UE-Positioning-MethodType,
                                       PositioningMethod,
   horizontalAccuracy
                                       UE-Positioning-Accuracy
                                                                          OPTIONAL,
    verticalAccuracy
                                       UE-Positioning-Accuracy
                                                                           OPTIONAL.
    gps-TimingOfCellWanted
                                      BOOLEAN,
    additionalAssistanceDataReq
                                       BOOLEAN,
                                                                    OPTIONAL,
    environmentCharacterisation
                                      EnvironmentCharacterisation
                                                                          OPTIONAL,
    velocityRequested
                                      ENUMERATED { true }
   gANSSTimingOfCellWanted
                                      BIT STRING (SIZE (16))
                                                                          OPTIONAL,
                                      BIT STRING (SIZE (8))
                                                                          OPTIONAL,
    {\tt gANSSCarrierPhaseMeasurementRequested}
                                       BIT STRING (SIZE (8))
                                                                          OPTIONAL
                                          ENUMERATED {
UE-Positioning-ResponseTime ::=
                                       s1, s2, s4, s8, s16,
                                       s32, s64, s128 }
-- SPARE: UTRA-CarrierRSSI, Max = 76
-- Values above Max are spare
```

```
UTRA-CarrierRSSI ::=
                                   INTEGER (0..127)
   ue-GANSSTimingOfCellFrames SEQUENCE {
UTRAN-GANSSReferenceTime ::=
                                      SEQUENCE {
        -- Actual value [ns] = (ms-Part * 4294967296 + ls-Part) * 250
        -- Actual values [ns] > 86399999999750 are reserved and are considered a protocol error
        ms-Part
                                            INTEGER (0..80),
       ls-Part
                                            INTEGER (0..4294967295)
    gANSS-TimeId
                                        INTEGER (0..7)
                                                                            OPTIONAL,
    gANSS-TimeUncertainty
                                        INTEGER (0..127)
                                                                            OPTIONAL,
                                        CHOICE {
    mode
        fdd
                                            SEOUENCE {
           primary-CPICH-Info
                                                PrimaryCPICH-Info
        tdd
                                            SEQUENCE {
           cellParameters
                                                CellParametersID
                                        INTEGER (0..4095)
    referenceSfn
}
UTRAN-GPS-DriftRate ::=
                                    ENUMERATED {
                                    utran-GPSDrift0, utran-GPSDrift1, utran-GPSDrift2,
                                    utran-GPSDrift5, utran-GPSDrift10, utran-GPSDrift15,
                                    utran-GPSDrift25, utran-GPSDrift50, utran-GPSDrift-1,
                                    utran-GPSDrift-2, utran-GPSDrift-5, utran-GPSDrift-10,
                                    utran-GPSDrift-15, utran-GPSDrift-25, utran-GPSDrift-50}
                                        SEQUENCE {
UTRAN-GPSReferenceTime ::=
    -- For utran-GPSTimingOfCell values above 2322431999999 are not
    -- used in this version of the specification
    -- Actual value utran-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
                                   SEQUENCE {
    utran-GPSTimingOfCell
                                        INTEGER (0..1023),
       ms-part
        ls-part
                                        INTEGER (0..4294967295)
    }.
    modeSpecificInfo
                                    CHOICE {
                                        SEQUENCE {
        fdd
            referenceIdentity
                                           PrimaryCPICH-Info
        tdd
                                        SEQUENCE {
           referenceIdentity
                                            CellParametersID
                    OPTIONAL,
    sfn
                                        INTEGER (0..4095)
}
UTRAN-GPSReferenceTimeResult ::=
                                                SEQUENCE {
   -- For ue-GPSTimingOfCell values above 37158911999999 are not
    -- used in this version of the specification
    -- Actual value ue-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    ue-GPSTimingOfCell
                              SEQUENCE {
                                        INTEGER (0.. 16383),
       ms-part
                                        INTEGER (0..4294967295)
       ls-part
    modeSpecificInfo
                                    CHOICE {
                                        SEQUENCE {
           referenceIdentity
                                            PrimaryCPICH-Info
        },
       tdd
                                        SEQUENCE {
           referenceIdentity
                                           CellParametersID
    },
                                        INTEGER (0..4095)
    sfn
}
VarianceOfRLC-BufferPayload ::=
                                    ENUMERATED {
                                        plv0, plv4, plv8, plv16, plv32, plv64,
                                        plv128, plv256, plv512, plv1024,
                                        plv2k, plv4k, plv8k, plv16k, spare2, spare1 }
VelocitvEstimate ::=
                                    CHOICE {
   horizontalVelocity
                                                    Horizontal Velocity,
    horizontalWithVerticalVelocity
                                                    HorizontalWithVerticalVelocity,
   horizontalVelocityWithUncertainty
                                                   HorizontalVelocityWithUncertainty,
   horizontalWithVerticalVelocityAndUncertainty HorizontalWithVerticalVelocityAndUncertainty
}
```

```
-- Actual value W = IE value * 0.1
W ::=
                                  INTEGER (0..20)
__ ******************
      OTHER INFORMATION ELEMENTS (10.3.8)
__ ***************
                                  INTEGER (0..7)
BCCH-ModificationInfo ::=
                                  SEQUENCE {
   mib-ValueTag
                                    MIB-ValueTag,
   bcch-ModificationTime
                                      BCCH-ModificationTime
                                                                        OPTIONAL
}
-- Actual value BCCH-ModificationTime = IE value * 8
BCCH-ModificationTime ::=
                                 INTEGER (0..511)
BSIC ::=
                                  SEQUENCE {
   ncc
                                      NCC,
   bcc
                                      BCC
}
{\tt CBS-DRX-Level1Information} ::= \\ {\tt SEQUENCE} \ \{
   ctch-AllocationPeriod
                                      INTEGER (1..256),
   cbs-FrameOffset
                                      INTEGER (0..255)
}
CBS-DRX-Level1Information-extension-r6 ::= ENUMERATED {p8, p16, p32, p64, p128, p256}
CDMA2000-Message ::=
                                  SEQUENCE {
   msg-Type
                                      BIT STRING (SIZE (8)),
                                      BIT STRING (SIZE (1..512))
   payload
                                     SEQUENCE (SIZE (1..maxInterSysMessages)) OF
CDMA2000-MessageList ::=
                                          CDMA2000-Message
CDMA2000-UMTS-Frequency-List ::=
                                      SEQUENCE (SIZE (1..maxNumCDMA2000Freqs)) OF
                                          FrequencyInfoCDMA2000
CellValueTag ::=
                                      INTEGER (1..4)
DeferredMeasurementControlReadingSupport ::= SEQUENCE {
   -- If modeSpecificInfo is not present, deferred SIB11, SIB11bis and SIB12 reading
    -- with default measurement quantities applies
                                CHOICE {
   modeSpecificInfo
                                       SEQUENCE {
           intraFreqMeasQuantity-FDD
                                            IntraFreqMeasQuantity-FDD-sib3
       tdd
                                         SEQUENCE {
           intraFreqMeasQuantity-TDDList IntraFreqMeasQuantity-TDD-sib3List
   }
           OPTIONAL
}
--Actual value = 2^(IE value)
ExpirationTimeFactor ::=
                                     INTEGER (1..8)
-- For each extended SIB type the value tag information is added at the end
{\tt ExtSIBTypeInfoSchedulingInfo-List} ::= {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxSIB})) \ {\tt OF}
                                          ExtSIBTypeInfoSchedulingInfo
ExtSIBTypeInfoSchedulingInfo ::= SEQUENCE {
   extensionSIB-Type
                                      SIB-TypeExt,
   schedulingInfo
                                      SchedulingInformation,
   valueTagInfo
                                      ValueTagInfo
}
FDD-UMTS-Frequency-List ::=
                                      SEQUENCE (SIZE (1..maxNumFDDFreqs)) OF
                                          -- NOTE1: The IE "UARFCN (Nlow)" corresponds to
                                          -- "uarfcn-DL" in FrequencyInfoFDD.
                                          -- NOTE2: The IE "UARFCN (Nupper)" corresponds to
                                           -- "uarfcn-UL" in FrequencyInfoFDD.
                                          {\tt FrequencyInfoFDD}
```

```
FrequencyInfoCDMA2000 ::=
                                         SEQUENCE {
                                                            BIT STRING (SIZE (5)),
BIT STRING (SIZE(11))
                                             band-Class
                                             cdma-Freq
}
GERAN-SystemInfoBlock ::=
                                        OCTET STRING (SIZE (1..23))
                                        SEQUENCE (SIZE (1..maxGERAN-SI)) OF GERAN-SystemInfoBlock
GERAN-SystemInformation ::=
GSM-BA-Range ::=
                                         SEQUENCE {
                                             gsmLowRangeUARFCN
                                                                      UARFCN.
                                             gsmUpRangeUARFCN
                                                                      UARFCN
}
GSM-BA-Range-List ::=
                                         SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
                                             GSM-BA-Range
-- This IE is formatted as 'TLV' and is coded in the same way as the Mobile Station Classmark 2
-- information element in [5]. The first octet is the Mobile station classmark 2 IEI and its value
-- shall be set to 33H. The second octet is the Length of mobile station classmark 2 and its value
-- shall be set to 3. The octet 3 contains the first octet of the value part of the Mobile Station
-- Classmark 2 information element, the octet 4 contains the second octet of the value part of the
-- Mobile Station Classmark 2 information element and so on. For each of these octets, the first/
-- leftmost/ most significant bit of the octet contains b8 of the corresponding octet of the Mobile
-- Station Classmark 2.
GSM-Classmark2 ::=
                                    OCTET STRING (SIZE (5))
-- This IE is formatted as 'V' and is coded in the same way as the value part in the Mobile station
-- classmark 3 information element in [5]
-- The value part is specified by means of CSN.1, which encoding results in a bit string, to which
-- final padding may be appended upto the next octet boundary [5]. The first/ leftmost bit of the
-- CSN.1 bit string is placed in the first/ leftmost/ most significant bit of the first
-- octet. This continues until the last bit of the CSN.1 bit string, which is placed in the last/
-- rightmost/ least significant bit of the last octet.
GSM-Classmark3 ::=
                                     OCTET STRING (SIZE (1..32))
GSM-MessageList ::=
                                     SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                         BIT STRING (SIZE (1..512))
GSM-MS-RadioAccessCapability ::=
                                     OCTET STRING (SIZE (1..64))
                                     BIT STRING {
GsmSecurityCapability ::=
                                         -- For each bit value "0" means false/ not supported
                                         a5-7(0),
                                         a5-6(1),
                                         a5-5(2),
                                         a5-4(3),
                                         a5-3(4),
                                         a5-2(5),
                                         a5-1(6)
                                             (SIZE (7))
                                         }
GSM-TargetCellInfoList ::= SEQUENCE (SIZE (1..maxGSMTargetCells)) OF
                                             GSM-TargetCellInfo
GSM-TargetCellInfo ::=
                                     SEQUENCE {
   bcch-ARFCN
                                         BCCH-ARFCN,
                                         Frequency-Band,
    frequency-band
                                                         OPTIONAL
}
IdentificationOfReceivedMessage ::= SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        receivedMessageType
                                        ReceivedMessageType
}
InterRAT-ChangeFailureCause ::= CHOICE {
                                    NULL,
    configurationUnacceptable
    physicalChannelFailure
                                        NULL,
    protocolError
                                         ProtocolErrorInformation,
   unspecified
                                        NULL,
    spare4
                                         NULL,
    spare3
                                         NULL,
    spare2
                                         NULL,
    spare1
                                         NULL
```

```
GERANIu-MessageList ::=
                                 SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                     BIT STRING (SIZE (1..32768))
GERANIu-RadioAccessCapability ::= BIT STRING (SIZE (1..170))
InterRAT-UE-RadioAccessCapability ::= CHOICE {
                                     SEQUENCE {
       gsm-Classmark2
                                         GSM-Classmark2,
       gsm-Classmark3
                                         GSM-Classmark3
   cdma2000
                                    SEQUENCE {
       cdma2000-MessageList
                                         CDMA2000-MessageList
}
InterRAT-UE-RadioAccessCapabilityList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
                                         InterRAT-UE-RadioAccessCapability
InterRAT-UE-RadioAccessCapability-v590ext ::= SEQUENCE {
                                GERANIu-RadioAccessCapability
   geranIu-RadioAccessCapability
InterRAT-UE-RadioAccessCapability-v690ext ::= SEQUENCE {
   supportOfInter-RAT-PS-Handover ENUMERATED { doesSupporInter-RAT-PS-Handover } OPTIONAL,
   gsm-MS-RadioAccessCapability
                                    GSM-MS-RadioAccessCapability
}
InterRAT-UE-SecurityCapability ::= CHOICE {
                                     SEQUENCE {
       gsmSecurityCapability
                                     GsmSecurityCapability
}
InterRAT-UE-SecurityCapList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
                                   InterRAT-UE-SecurityCapability
                                 CHOICE {
InterRAT-HO-FailureCause ::=
   configurationUnacceptable
                                    NULL,
   physicalChannelFailure
                                     NULL,
   protocolError
                                     ProtocolErrorInformation,
   interRAT-ProtocolError
                                    NULL.
   unspecified
                                     NULL,
   spare11
                                     NULL,
   spare10
                                     NULL,
   spare9
                                     NULL,
                                     NULL.
   spare8
   spare7
                                     NULL.
   spare6
                                     NULL,
   spare5
                                     NULL.
   spare4
                                     NULL.
   spare3
                                     NULTITA.
   spare2
                                     NULL,
   spare1
                                     NULL
}
{\tt MasterInformationBlock ::= SEQUENCE } \{
       mib-ValueTag
                                   MIB-ValueTag,
       -- TABULAR: The PLMN identity and ANSI-41 core network information
       -- are included in PLMN-Type.
                                   PLMN-Type,
       plmn-Type
       sibSb-ReferenceList
                                     SIBSb-ReferenceList,
    -- Extension mechanism for non- release99 information
       v690NonCriticalExtensions SEQUENCE {
           masterInformationBlock-v690ext
v6b0NonCriticalExtensions
MasterInformationBlock-v690ext,
v6b0NonCriticalExtensions
SEQUENCE {
              OPTIONAL
              OPTIONAL
           OPTIONAL
}
MasterInformationBlock-v690ext ::= SEQUENCE {
                                     MultiplePLMN-List-r6
                                                               OPTIONAL
   multiplePLMN-List
```

```
}
MIB-ValueTag ::=
                                     INTEGER (1..8)
NCC ::=
                                      INTEGER (0..7)
PLMN-ValueTag ::=
                                      INTEGER (1..256)
PredefinedConfigIdentityAndValueTag ::= SEQUENCE {
    predefinedConfigIdentity
                                              PredefinedConfigIdentity,
    predefinedConfigValueTag
                                               PredefinedConfigValueTag
}
ProtocolErrorInformation ::=
                                      SEQUENCE {
                                       CHOICÈ {
    diagnosticsType
                                               SEQUENCE {
        type1
            protocolErrorCause
                                                   ProtocolErrorCause
                                               NULL
        spare
    }
}
                                      ENUMERATED {
ReceivedMessageType ::=
                                           activeSetUpdate,
                                           cellChangeOrderFromUTRAN,
                                           cellUpdateConfirm,
                                           counterCheck,
                                           downlinkDirectTransfer,
                                           interRATHandoverCommand,
                                           measurementControl,
                                           pagingType2,
                                           physicalChannelReconfiguration,
                                           physicalSharedChannelAllocation,
                                           radioBearerReconfiguration,
                                           radioBearerRelease,
                                           radioBearerSetup,
                                           rrcConnectionRelease,
                                           rrcConnectionReject,
                                           rrcConnectionSetup,
                                           securityModeCommand,
                                           signallingConnectionRelease,
                                           transportChannelReconfiguration,
                                           transport {\tt FormatCombinationControl},\\
                                           ueCapabilityEnquiry,
                                           ueCapabilityInformationConfirm,
                                           uplinkPhysicalChannelControl,
                                           uraUpdateConfirm,
                                           utranMobilityInformation,
                                           assistanceDataDelivery,
                                           spare6, spare5, spare4, spare3, spare2,
                                           spare1
}
Rplmn-Information ::= SEQUENCE {
   gsm-BA-Range-List GSM-BA
    gsm-BA-Range-List GSM-BA-Range-List fdd-UMTS-Frequency-List FDD-UMTS-Frequency-List tdd-UMTS-Frequency-List TDD-UMTS-Frequency-List
                                                                                 OPTIONAL.
                                                                                 OPTIONAL,
                                                                                 OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-List
                                                                                OPTIONAL
}
Rplmn-Information-r4 ::=
                                 SEQUENCE {
    fdd-UMTS-Frequency-List FDD-IMMG T
    gsm-BA-Range-List
                                                                                 OPTIONAL,
                                      FDD-UMTS-Frequency-List
                                                                                 OPTIONAL,
    -- the option is the same for 7.68 Mcps TDD as for 3.84 Mcps TDD
    -- i.e. TDD-UMTS-Frequency-List applies
    tdd384-UMTS-Frequency-List TDD-UMTS-Frequency-List tdd128-UMTS-Frequency-List TDD-UMTS-Frequency-List
                                                                                 OPTIONAL,
                                                                                 OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-List
                                                                                 OPTIONAL
}
SchedulingInformation ::=
                                      SEQUENCE {
    scheduling
                                          SEQUENCE {
        segCount
                                               SegCount
                                                                                  DEFAULT 1,
                                               CHOICE {
         sib-Pos
             -- The element name indicates the repetition period and the value
             -- (multiplied by two) indicates the position of the first segment.
                                                   INTEGER (0..1),
             rep4
```

```
rep8
                                               INTEGER (0..3),
                                               INTEGER (0..7),
            rep16
            rep32
                                               INTEGER (0..15),
            rep64
                                               INTEGER (0..31),
            rep128
                                               INTEGER (0..63),
            rep256
                                               INTEGER (0..127),
            rep512
                                               INTEGER (0..255),
                                               INTEGER (0..511),
           rep1024
            rep2048
                                               INTEGER (0..1023),
            rep4096
                                               INTEGER (0..2047)
        },
       sib-PosOffsetInfo
                                           SibOFF-List
                                                                           OPTIONAL
}
SchedulingInformationSIB ::=
                                     SEQUENCE {
                                       SIB-TypeAndTag,
    sib-Type
    scheduling
                                       SchedulingInformation
}
SchedulingInformationSIBSb ::=
                                     SEQUENCE {
    sibSb-Type
                                       SIBSb-TypeAndTag,
    scheduling
                                       SchedulingInformation
}
                                   INTEGER (1..16)
SegCount ::=
SegmentIndex ::=
                                   INTEGER (1..15)
-- Actual value SFN-Prime = 2 * IE value
SFN-Prime ::=
                                   INTEGER (0..2047)
SIB-Data-fixed ::=
                                  BIT STRING (SIZE (222))
                                  BIT STRING (SIZE (1..214))
SIB-Data-variable ::=
SIBOccurIdentity ::=
                              INTEGER (0..15)
SIBOccurrenceIdentityAndValueTag ::= SEQUENCE {
    sibOccurIdentity
                                  SIBOccurIdentity,
    sibOccurValueTag
                                   SIBOccurValueTag
SIBOccurValueTag ::=
                              INTEGER (0..15)
SIB-ReferenceList ::=
                                   SEQUENCE (SIZE (1..maxSIB)) OF
                                       SchedulingInformationSIB
SIBSb-ReferenceList ::=
                                   SEQUENCE (SIZE (1..maxSIB)) OF
                                       SchedulingInformationSIBSb
                                   SEQUENCE (SIZE (1..maxSIB-FACH)) OF
SIB-ReferenceListFACH ::=
                                       SchedulingInformationSIB
SIB-Type ::=
                                   ENUMERATED {
                                      masterInformationBlock,
                                       systemInformationBlockType1,
                                       systemInformationBlockType2,
                                       systemInformationBlockType3,
                                        systemInformationBlockType4,
                                       systemInformationBlockType5,
                                       systemInformationBlockType6,
                                       systemInformationBlockType7,
        -- dummy, dummy2 and dummy3 are not used in this version of the specification,
        -- they should not be sent. If they are received they should be ignored dummy,
                                        dummy2,
                                        dummy3,
                                        systemInformationBlockType11,
                                        systemInformationBlockType12,
                                       systemInformationBlockType13,
                                        systemInformationBlockType13-1,
                                        systemInformationBlockType13-2,
                                        systemInformationBlockType13-3,
                                        systemInformationBlockType13-4,
                                        systemInformationBlockType14,
```

```
systemInformationBlockType15,
                                         systemInformationBlockType15-1,
                                         systemInformationBlockType15-2,
                                         systemInformationBlockType15-3,
                                         systemInformationBlockType16,
                                         systemInformationBlockType17,
                                         systemInformationBlockType15-4,
                                         systemInformationBlockType18,
                                         schedulingBlock1,
                                         schedulingBlock2,
                                         systemInformationBlockType15-5,
                                         systemInformationBlockType5bis,
                                         extensionType }
SIB-TypeAndTag ::=
                                    CHOICE {
                                       PLMN-ValueTag,
    sysInfoType1
    sysInfoType2
                                         CellValueTag,
    sysInfoType3
                                         CellValueTag,
                                         CellValueTag,
    sysInfoType4
                                         CellValueTag,
    sysInfoType5
                                         CellValueTag,
    sysInfoType6
                                         NULL,
    sysInfoType7
    -- dummy, dummy2 and dummy3 are not used in this version of the specification,
    -- they should not be sent. If they are received the UE behaviour is not specified.
    dummy
                                         CellValueTag.
    dummy2
                                         NULL,
    dummy3
                                         NULL,
    sysInfoType11
                                         CellValueTag,
    sysInfoType12
                                         CellValueTag,
    sysInfoType13
                                         CellValueTag,
    sysInfoType13-1
                                         CellValueTag,
    sysInfoType13-2
                                         CellValueTag,
    sysInfoType13-3
                                         CellValueTag,
    sysInfoType13-4
                                         CellValueTag,
    sysInfoType14
                                        NULL,
                                         CellValueTag,
    sysInfoType15
                                        PredefinedConfigIdentityAndValueTag,
    sysInfoType16
    sysInfoType17
                                         NULL,
    sysInfoType15-1
                                        CellValueTag,
    sysInfoType15-2
                                         SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-3
                                         SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-4
                                        CellValueTag,
    sysInfoType18
                                        CellValueTag,
    sysInfoType15-5
                                        CellValueTag,
    sysInfoType5bis
                                        CellValueTag,
    spare4
                                         NULL,
    spare3
                                         NULL.
    spare2
                                         NULL.
    spare1
                                         NULL
}
                                        CHOICE {
SIBSb-TypeAndTag ::=
    sysInfoType1
                                         PLMN-ValueTag,
                                         CellValueTag,
    sysInfoType2
    sysInfoType3
                                         CellValueTag,
    sysInfoType4
                                         CellValueTag,
    sysInfoType5
                                         CellValueTag,
    sysInfoType6
                                         CellValueTag,
    sysInfoType7
                                         NULL,
    -- dummy, dummy2 and dummy3 are not used in this version of the specification,
    -- they should not be sent. If they are received the UE behaviour is not specified.
    dummy
                                         CellValueTag,
    dummy2
                                         NULL,
    dummy3
                                         NULL,
                                         CellValueTag,
    sysInfoType11
    sysInfoType12
                                         CellValueTag,
                                         CellValueTag,
    sysInfoType13
    sysInfoType13-1
                                         CellValueTag,
    sysInfoType13-2
                                         CellValueTag,
    sysInfoType13-3
                                        CellValueTag
                                         CellValueTag,
    sysInfoType13-4
    sysInfoType14
                                         NULL,
    sysInfoType15
                                         CellValueTag,
                                         PredefinedConfigIdentityAndValueTag,
    sysInfoType16
    sysInfoType17
                                        NULL.
    sysInfoTypeSB1
                                        CellValueTag,
                                         CellValueTag,
    sysInfoTypeSB2
                                         CellValueTag,
    sysInfoType15-1
```

```
sysInfoType15-2
                                               SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-3
                                               SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-4
                                               CellValueTag,
                                               CellValueTag,
    sysInfoType18
    sysInfoType15-5
                                               CellValueTag,
                                               CellValueTag,
    sysInfoType5bis
                                               NULL,
    spare2
                                               NULL
    spare1
}
SIB-TypeExt ::=
                                         CHOICE {
    systemInfoType11bis
                                               NULL.
    systemInfoType15bis
                                               NULL
    systemInfoType15-1bis
                                              NULL,
    systemInfoType15-2bis
                                               NULL.
    systemInfoType15-3bis
                                              NULL,
    systemInfoType15-6
                                               NULL
    systemInfoType15-7
                                               NULL
    systemInfoType15-8
                                               NULL
                                          ENUMERATED {
SibOFF ::=
                                               so2, so4, so6, so8, so10,
                                               so12, so14, so16, so18,
                                               so20, so22, so24, so26,
so28, so30, so32 }
                                          SEQUENCE (SIZE (1..15)) OF
SibOFF-List ::=
                                               SibOFF
SysInfoType1 ::=
                                          SEQUENCE {
    -- Core network IEs
         cn-CommonGSM-MAP-NAS-SysInfo
                                              NAS-SystemInformationGSM-MAP,
         cn-DomainSysInfoList
                                               CN-DomainSysInfoList,
    -- User equipment IEs

    ue-ConnTimersAndConstants
    UE-ConnTimersAndConstants

    ue-IdleTimersAndConstants
    UE-IdleTimersAndConstants

                                                                                         OPTIONAL,
                                                                                        OPTIONAL,
     -- Extension mechanism for non- release99 information
         v3a0NonCriticalExtensions SEQUENCE {
   sysInfoType1-v3a0ext SysInfoType1-v3a0ext-IEs,
   nonCriticalExtensions SEQUENCE {} OPTIONAL
              sysInfoTyper-value nonCriticalExtensions SEQUE OPTIONAL
                                              SEQUENCE {} OPTIONAL
         }
}
SysInfoType1-v3a0ext-IEs ::= SEQUENCE {
    ue-ConnTimersAndConstants-v3a0ext
                                                    UE-ConnTimersAndConstants-v3a0ext,
    ue-IdleTimersAndConstants-v3a0ext
                                                    UE-IdleTimersAndConstants-v3a0ext
}
                                          SEQUENCE {
SysInfoType2 ::=
    -- UTRAN mobility IEs
        ura-IdentityList
                                               URA-IdentityList,
     -- Extension mechanism for non- release99 information
         nonCriticalExtensions
                                               SEQUENCE { }
                                                                                          OPTIONAL
}
                                         SEQUENCE {
SysInfoType3 ::=
         sib4indicator
                                            BOOLEAN,
     -- UTRAN mobility IEs
                                              CellIdentity,
         cellIdentity
         cellSelectReselectInfo
cellAccessRestriction
                                              CellSelectReselectInfoSIB-3-4,
                                              CellAccessRestriction,
     -- Extension mechanism for non- release99 information
         v4b0NonCriticalExtensions SEQUENCE {
              v590NonCriticalExtension sysInfoType3-v4b0ext SysInfoType3-v4b0ext SysInfoType3-v590ext SysInfoType3-v50NoncoriticalExtension Stepuence {
    sysInfoType3-v590ext SysInfoType3-v50NoncoriticalExtension SysInfoType3-v50NoncoriticalExtension SysInfoType3-v50NoncoriticalExtension SysInfoType3-v4b0ext-IEs,
                  SysInfoType3-v5c0ext-IEs,
                        v670NonCriticalExtension
                                                              SEQUENCE {
                            sysInfoType3-v670ext
                                                                       SysInfoType3-v670ext,
                            v770NonCriticalExtension
                                                                       SEQUENCE {
                                 sysInfoType3-v770ext
                                                                            SysInfoType3-v770ext-IEs,
                                 nonCriticalExtensions
                                                                            SEQUENCE {} OPTIONAL
                                                             OPTIONAL
                       }
                                                        OPTIONAL
                  }
                                                    OPTIONAL
              }
                                               OPTIONAL
```

```
}
                                        OPTIONAL
}
SysInfoType3-v4b0ext-IEs ::= SEQUENCE {
    mapping-LCR
                                        Mapping-LCR-r4
                                                                                       OPTIONAL
SysInfoType3-v590ext ::= SEQUENCE {
    cellSelectReselectInfo-v590ext
                                           CellSelectReselectInfo-v590ext
                                                                                       OPTIONAL
SysInfoType3-v5c0ext-IEs ::= SEQUENCE {
    cellSelectReselectInfoTreselectionScaling-v5c0ext
                                             CellSelectReselectInfoTreselectionScaling-v5c0ext OPTIONAL
}
SysInfoType3-v670ext ::= SEQUENCE {
         domainSpecificAccessRestrictionParametersForPLMNOfMIB
                                         DomainSpecificAccessRestrictionParam-v670ext OPTIONAL,
         domainSpecificAccessRestictionForSharedNetwork
                                         DomainSpecificAccessRestrictionForSharedNetwork-v670ext OPTIONAL
}
                                         SEQUENCE {
SysInfoType3-v770ext-IEs ::=
    {\tt deferredMeasurementControlReadingSupport}
                                                  DeferredMeasurementControlReadingSupport
                                                                                                     OPTIONAL,
    q-QualMin-Offset
                                                  Q-QualMin-Offset
                                                                          OPTIONAL,
    q-RxlevMin-Offset
                                                  Q-RxlevMin-Offset
                                                                                       OPTIONAL,
    mbsfnOnlyService
                                                  MBSFNOnlyService
                                                                                      OPTIONAL
}
                                       SEQUENCE {
SysInfoType4 ::=
    -- UTRAN mobility IEs
         cellIdentity
                                            CellIdentity,
         cellSelectReselectInfo CellSelectReselectInfoSIB-3-4, cellAccessRestriction CellAccessRestriction.
    -- Extension mechanism for non- release99 information
         v4b0NonCriticalExtensions SEQUENCE {
    sysInfoType4-v4b0ext SysInfo
             V590NonCriticalExtension SysInfoType4-v4b0ext SysInfoType4-v4b0ext SysInfoType4-v590ext SysInfoType4-v590ext V5b0NonCriticalT
                  sysInfoType4-v590ext SysInfoType4-v590ext,
v5b0NonCriticalExtension SEQUENCE {
    sysInfoType4-v5b0ext SysInfoType4-v5b0ext-IEs,
    v5c0NonCriticalExtension SEQUENCE {
        sysInfoType4-v5c0ext SysInfoType4-v5c0
        nonCriticalExtensions SEQUENCE {}

                                                                    SysInfoType4-v5c0ext-IEs,
                                                                                                     OPTIONAL
                           OPTIONAL
                       OPTIONAL
                  OPTIONAL
             OPTIONAL
}
SysInfoType4-v4b0ext-IEs ::= SEQUENCE {
                                                                                       OPTIONAL
    mapping-LCR
                                         Mapping-LCR-r4
}
SysInfoType4-v590ext ::= SEQUENCE {
    cellSelectReselectInfo-v590ext
                                             CellSelectReselectInfo-v590ext
}
SysInfoType4-v5b0ext-IEs ::= SEQUENCE {
   cellSelectReselectInfoPCHFACH-v5b0ext CellSelectReselectInfoPCHFACH-v5b0ext
                                                                                                    OPTIONAL
SysInfoType4-v5c0ext-IEs ::= SEQUENCE {
    cellSelectReselectInfoTreselectionScaling-v5c0ext
                                             CellSelectReselectInfoTreselectionScaling-v5c0ext OPTIONAL
}
SysInfoType5 ::=
                                         SEQUENCE {
         sib6indicator
                                             BOOLEAN,
     -- Physical channel IEs
         pich-PowerOffset
                                             PICH-PowerOffset,
         modeSpecificInfo
                                             CHOICE {
                                               SEQUENCE {
             fdd
                  aich-PowerOffset
                                                      AICH-PowerOffset
             },
```

```
SEQUENCE {
            -- If PDSCH/PUSCH is configured for 1.28Mcps or 7.68Mcps TDD, the following IEs should be absent
            -- and the info included in the respective tdd128SpecificInfo or tdd768SpecificInfo instead.
            -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
            -- included.
                                                                                                                                          PUSCH-SysInfoList-SFN
                                               pusch-SysInfoList-SFN
                                               pdsch-SysInfoList-SFN
                                               pdsch-SysInfoList-SFN PDSCH-SysInfoList-SFN openLoopPowerControl-TDD OpenLoopPowerControl-TDD
                                                                                                                                                                                                                                  OPTIONAL,
                        },
                       primaryCCPCH-Info
                                                                                                                  PrimaryCCPCH-Info
                                                                                                                                                                                                                                  OPTIONAL,
                        prach-SystemInformationList PRACH-SystemInformationList, SCCPCH-SystemInformationList,
                        -- cbs-DRX-Level1Information is conditional on any of the CTCH indicator IEs in
                         -- sCCPCH-SystemInformationList
                       cbs-DRX-Level1Information
                                                                                                                     CBS-DRX-Level1Information
                                                                                                                                                                                                                               OPTIONAL,
            -- Extension mechanism for non- release99 information
                        v4b0NonCriticalExtensions SEQUENCE {
    sysInfoType5-v4b0ext SysInfoType5-v4b0ext-IEs OPTIONAL,
                        -- Extension mechanism for non- rel-4 information
                                                v650NonCriticalExtensions SEQUENCE {
sysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v650ext SysInfoType5-v
                                   v590NonCriticalExtensions SEQUENCE {
                                                                                                                                                                                                                                          OPTIONAL,
                                                           V680NonCriticalExtensions sysInfoType5-v680ext sysInfoType5-v680ext v690NonCriticalExtensions sysInfoType5-v680ext                                                                                                                                                                                                                                                          OPTIONAL,
                                                                       SysInfoType5-v680ext SysInfoType5-v680ext-IEs v690NonCriticalExtensions SEQUENCE {
SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoType5-v690ext SysInfoTyp
                                                                                                                                                                                                                                                                     OPTIONAL,
                                                                                   sysInfoType5-v770ext
nonCriticalExtensions
                                                                                                                                                                                  SysInfoType5-v770ext-IEs,
                                                                                                                                                                                               SEQUENCE {}
                                                                                                                                                                                                                                                                     OPTIONAL
                                                                                                           OPTIONAL
                                                                                               OPTIONAL
                                                                                   OPTIONAL
                                                                       OPTIONAL
                                   }
                                                           OPTIONAL
                                               OPTIONAL
}
SysInfoType5-v4b0ext-IEs ::= SEQUENCE {
             -- The following IE PNBSCH-Allocation-r4 shall be used for 3.84Mcps TDD only.
                                                                                                       PNBSCH-Allocation-r4
            pNBSCH-Allocation-r4
                                                                                                                                                                                                 OPTIONAL.
            -- In case of TDD, the following IE is included instead of the
            -- IE up-IPDL-Parameter in up-OTDOA-AssistanceData.
            openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4 OPTIONAL,
-- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
-- PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
-- IE rach-TransportFormatSet shall be absent and the corresponding IE in the following
-- PRACH-SystemInformationList-LCR-r4 shall be used
           prach-SystemInformationList-LCR-r4 PRACH-SystemInformationList-LCR-r4 OPTIONAL,
            tdd128SpecificInfo
                                                                                             SEQUENCE {
                       pusch-SysInfoList-SFN PUSCH-SysInfoList-SFN-LCR-r4 OPTIONAL, pdsch-SysInfoList-SFN PDSCH-SysInfoList-SFN-LCR-r4 OPTIONAL, pCCPCH-LCR-Extensions
                       pCCPCH-LCR-Extensions PrimaryCCPCH-Info-LCR-r4-ext OPTIONA sCCPCH-LCR-ExtensionsList SCCPCH-SystemInformationList-LCR-r4-ext
                                                                                                                                                                                                        OPTIONAL,
            frequencyBandIndicator
                                                                                          RadioFrequencyBandFDD
                                                                                                                                                                                                          OPTIONAL
}
SysInfoType5-v590ext-IEs ::= SEQUENCE {
                                                                                    SEQUENCE {
            hcr-r5-SpecificInfo
                                                                                                      PUSCH-SysInfoList-SFN-HCR-r5
                       pusch-SysInfoList-SFN
                                                                                                                                                                                                                      OPTIONAL,
                       pdsch-SysInfoList-SFN
                                                                                                                      PDSCH-SysInfoList-SFN-HCR-r5
                                                                                                                                                                                                                      OPTIONAL
                                                                                                                                                                                                                      OPTIONAL
}
SysInfoType5-v650ext-IEs ::= SEQUENCE {
            frequencyBandIndicator2
                                                                                      RadioFrequencyBandFDD2
SysInfoType5-v680ext-IEs ::= SEQUENCE {
            -- TABULAR: HSDPA Cell Indicator is MD in tabular description
            -- Default value is 'HSDPA Capability not indicated'
           OPTIONAL
}
                                                                                            SEQUENCE {
SysInfoType5-v690ext-IEs ::=
            -- TABULAR: E-DCH Cell Indicator is MD in tabular description
```

```
-- Default value is 'E-DCH Capability not indicated'
                                         ENUMERATED { edch-CapableCell }
    edch-CellIndicator
    sccpch-SystemInformation-MBMS
                                         CHOICE {
        mcchOnSCCPCHusedForNonMBMS
                                             MBMS-MCCH-ConfigurationInfo-r6,
        mcchOnSCCPCHusedOnlyForMBMS
                                             SCCPCH-SystemInformation-MBMS-r6
           OPTIONAL,
    additionalPRACH-TF-and-TFCS-CCCH-List AdditionalPRACH-TF-and-TFCS-CCCH-List OPTIONAL, cBS-DRX-LevellInformation-extension CBS-DRX-LevellInformation-extension-r6 OPTIONAL
}
SysInfoType5-v770ext-IEs ::=
                                     SEQUENCE {
    modeSpecificInfo
                                         CHOICE {
                                             SEQUENCE {
        fdd
            hs-dsch-CommonSystemInformation
                                                HS-DSCH-CommonSystemInformation,
            hs-dsch-PagingSystemInformation
                                                 HS-DSCH-PagingSystemInformation
                                             SEQUENCE {
                                                 PUSCH-SysInfoList-SFN-VHCR
            pusch-SysInfoList-SFN
                                                                                       OPTIONAL,
                                                 PDSCH-SysInfoList-VHCR-r7
            pdsch-SysInfoList-SFN
            -- If SysInfoType5 is sent to configure a 7.68Mcps TDD cell, the 'prach-RACH-Info' in
            -- IE PRACH-SystemInformationList shall be ignored, 'prach-Partitioning' shall be absent
            -- and the corresponding IE in the following IE PRACH-SystemInformationList-VHCR-r7
            -- shall be used instead.
            prach-SystemInformationList
                                                 PRACH-SystemInformationList-VHCR-r7 OPTIONAL
        tdd128
                                             SEQUENCE {
            prach-SystemInformationList
                                                PRACH-SystemInformationList-LCR-v770ext OPTIONAL
            OPTIONAL,
    -- If SysInfoType5 is sent to configure a 7.68 Mcps TDD cell (in any mode) or a 3.84 Mcps TDD
    -- cell operating in MBSFN mode, IE SCCPCH-SystemInformationList-HCR-VHCR-r7 is used, otherwise
    -- IE SCCPCH-SystemInformationList-r6 is used.
    sccpch-SystemInformationList SCCPCH-SystemInformationList-HCR-VHCR-r7
                                                                                       OPTIONAL,
    sccpch-SystemInformation-MBMS
                                        CHOICE {
        -- If choice is 'mcchOnSCCPCHusedForNonMBMS', IE MBMS-MCCH-ConfigurationInfo-r6 is used.
        -- If choice is 'mcchOnSCCPCHusedOnlyForMBMS', IE MBMS-MCCH-ConfigurationInfo-r7 is used
        -- to configure a 7.68Mcps TDD cell or a cell operating in MBSFN mode, otherwise IE
        -- SCCPCH-SystemInformation-MBMS-r6 is used.
        mcchOnSCCPCHusedOnlyForMBMS
                                             SCCPCH-SystemInformation-MBMS-r7
            OPTIONAL,
    tDD-MBSFNInformation
                                         TDD-MBSFNInformation
                                                                          OPTIONAL
}
-- SysInfoType5bis uses the same structure as SysInfoType5
SysInfoType5bis ::= SysInfoType5
SysInfoType6 ::=
                                    SEQUENCE {
    -- Physical channel IEs
                                         PICH-PowerOffset,
        pich-PowerOffset
        modeSpecificInfo
                                         CHOICE {
                                            SEQUENCE {
            fdd
                aich-PowerOffset
                                                 AICH-PowerOffset,
                -- dummy is not used in this version of specification, it should
                -- not be sent and if received it should be ignored.
                                                 CSICH-PowerOffset
            t.dd
                                             SEQUENCE {
                -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList-SFN, -- pdsch-SysInfoList-SFN and openLoopPowerControl-TDD should be absent
                -- and the info included in the tdd128SpecificInfo instead.
                -- If PDSCH/PUSCH is configured for 7.68Mcps TDD, pusch-SysInfoList-SFN
                -- and pdsch-SysInfoList-SFN should be absent and the info included in the
                -- tdd768SpecificInfo instead.
                -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should
                -- also be included.
                pusch-SysInfoList-SFN
                                                 PUSCH-SysInfoList-SFN
                                                                               OPTIONAL,
                pdsch-SysInfoList-SFN
                                                 PDSCH-SysInfoList-SFN
                                                                               OPTIONAL,
                openLoopPowerControl-TDD
                                                 OpenLoopPowerControl-TDD
            }
        primaryCCPCH-Info
                                         PrimaryCCPCH-Info
                                                                              OPTIONAL,
        prach-SystemInformationList
                                        PRACH-SystemInformationList
                                                                              OPTIONAL,
        sCCPCH-SystemInformationList SCCPCH-SystemInformationList
                                                                              OPTIONAL,
        cbs-DRX-Level1Information
                                        CBS-DRX-Level1Information
                                                                              OPTIONAL.
        -- Conditional on any of the CTCH indicator IEs in
        -- sCCPCH-SystemInformationList
    -- Extension mechanism for non- release99 information
```

```
v4b0NonCriticalExtensions
                                         SEQUENCE {
                                             SysInfoType6-v4b0ext-IEs
            sysInfoType6-v4b0ext
                                                                              OPTIONAL,
        -- Extension mechanism for non- rel-4 information
            {\tt v590NonCriticalExtensions} \hspace{0.5cm} {\tt SEQUENCE} \hspace{0.1cm} \big\{
                sysInfoType6-v590ext
                                                 SysInfoType6-v590ext-IEs
                                                                                  OPTIONAL,
                                                 SEQUENCE {
                v650nonCriticalExtensions
                    sysInfoType6-v650ext
                                                     SysInfoType6-v650ext-IEs
                                                                                      OPTIONAL,
                    v690nonCriticalExtensions
                                                     SEQUENCE {
                         sysInfoType6-v690ext
                                                         SysInfoType6-v690ext-IEs,
                        v770NonCriticalExtensions
                                                         SEQUENCE {
                            sysInfoType6-v770ext
                                                             SysInfoType6-v770ext-IEs,
                                                              SEQUENCE {}
                                                                                          OPTIONAL
                            nonCriticalExtensions
                            OPTIONAL
                    }
                                                 OPTIONAL
               }
                                             OPTIONAL
            }
                                         OPTIONAL
        }
                                     OPTIONAL
}
{\tt SysInfoType6-v4b0ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
    -- openLoopPowerControl-IPDL-TDD is present only if IPDLs are applied for TDD
    openLoopPowerControl-IPDL-TDD
                                    OpenLoopPowerControl-IPDL-TDD-r4
                                                                          OPTIONAL,
     -- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included
    -- in PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
    -- IE rach-TransportFormatSet shall be absent and the corresponding IEs in the following -- PRACH-SystemInformationList-LCR-r4 shall be used
    prach-SystemInformationList-LCR-r4 PRACH-SystemInformationList-LCR-r4 OPTIONAL,
    tdd128SpecificInfo
                                     SEQUENCE {
        pusch-SysInfoList-SFN
                                        PUSCH-SysInfoList-SFN-LCR-r4 OPTIONAL,
                                         PDSCH-SysInfoList-SFN-LCR-r4 OPTIONAL,
        pdsch-SysInfoList-SFN
                                                                         OPTIONAL,
        pCCPCH-LCR-Extensions
                                         PrimaryCCPCH-Info-LCR-r4-ext
        sCCPCH-LCR-ExtensionsList
                                         SCCPCH-SystemInformationList-LCR-r4-ext OPTIONAL
                                                                      OPTIONAL,
    frequencyBandIndicator
                                    RadioFrequencyBandFDD
                                                                      OPTIONAL
}
SysInfoType6-v590ext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo
                                    SEQUENCE {
        pusch-SysInfoList-SFN
                                        PUSCH-SysInfoList-SFN-HCR-r5
                                                                          OPTIONAL,
        pdsch-SysInfoList-SFN
                                        PDSCH-SysInfoList-SFN-HCR-r5
                                                                          OPTIONAL
                                                                          OPTIONAL
}
SysInfoType6-v650ext-IEs ::= SEQUENCE {
                             RadioFrequencyBandFDD2
    frequencyBandIndicator2
SysInfoType6-v690ext-IEs ::= SEQUENCE {
    additionalPRACH-TF-and-TFCS-CCCH-List AdditionalPRACH-TF-and-TFCS-CCCH-List OPTIONAL
}
SysInfoType6-v770ext-IEs ::=
                                     SEQUENCE {
    tdd768SpecificInfo
                                        SEQUENCE {
                                             PUSCH-SysInfoList-SFN-VHCR
        pusch-SysInfoList-SFN
                                                                                  OPTIONAL,
        pdsch-SysInfoList-SFN
                                             PDSCH-SysInfoList-VHCR-r7
                                                                                  OPTIONAL,
        -- If SysInfoType6 is sent to configure a 7.68Mcps TDD cell, the 'prach-RACH-Info' in
        -- IE PRACH-SystemInformationList shall be ignored, 'prach-Partitioning' shall be absent
        -- and the corresponding IE in the following IE PRACH-SystemInformationList-VHCR-r7
        -- shall be used instead.
        prach-SystemInformationList
                                             PRACH-SystemInformationList-VHCR-r7 OPTIONAL
            OPTIONAL,
    -- If SysInfoType6 is sent to configure a 7.68 Mcps TDD cell,
    -- IE SCCPCH-SystemInformationList-HCR-VHCR-r7 is used, otherwise
    -- IE SCCPCH-SystemInformationList-r6 is used.
                                        SCCPCH-SystemInformationList-HCR-VHCR-r7
    sccpch-SystemInformationList
                                                                                      OPTIONAL
SysInfoType7 ::=
                                     SEQUENCE {
    -- Physical channel IEs
        modeSpecificInfo
                                         CHOICE {
            fdd
                                             SEQUENCE {
                ul-Interference
                                                 UL-Interference
            },
            tdd
                                             NULL
        prach-Information-SIB5-List
                                      DynamicPersistenceLevelList,
        prach-Information-SIB6-List
                                         DynamicPersistenceLevelList
                                                                              OPTIONAL.
        expirationTimeFactor
                                         ExpirationTimeFactor
                                                                              OPTIONAL,
```

```
-- Extension mechanism for non- release99 information
             nonCriticalExtensions
                                                                 SEQUENCE {}
                                                                                                                              OPTIONAL
}
-- This IE is not used in this version of the specification.
-- It was kept only for backwards compatibility reasons
                                                           SEQUENCE {
SysInfoType8 ::=
       -- User equipment IEs
             -- dummy1, dummy2, dummy3 are not used in this version of the specification and
              -- they should be ignored by the receiver.
             dummy1
                                                                 CPCH-Parameters,
       -- Physical channel IEs
             dummy2
                                                                  CPCH-SetInfoList,
             dummy3
                                                                  CSICH-PowerOffset,
       -- Extension mechanism for non- release99 information
                                                                                                                              OPTIONAL
             nonCriticalExtensions
                                                                SEOUENCE {}
}
-- This IE is not used in this version of the specification.
-- It was kept only for backwards compatibility reasons
SysInfoType9 ::=
                                                           SEQUENCE {
       -- Physical channel IEs
             -- dummy is not used in this version of the specification and -- it should be ignored by the receiver.
                                                                 CPCH-PersistenceLevelsList.
             dummy
       -- Extension mechanism for non- release99 information
             nonCriticalExtensions
                                                                 SEQUENCE {}
                                                                                                                              OPTIONAL
}
-- This IE is not used in this version of the specification.
-- It was kept only for backwards compatibility reasons
                                                           SEQUENCE {
SysInfoType10 ::=
       -- User equipment IEs
             -- dummy is not used in this version of the specification, it should
             \mbox{--} not be sent and if received it should be ignored.
                                                                 DRAC-SysInfoList,
       -- Extension mechanism for non- release99 information
             nonCriticalExtensions
                                                                 SEQUENCE {}
                                                                                                                              OPTIONAL
SysInfoType11 ::=
                                                           SEQUENCE {
            sib12indicator
                                                                BOOLEAN,
       -- Measurement IEs
             OPTIONAL,
       -- Extension mechanism for non- release99 information
             v4b0NonCriticalExtensions SEQUENCE {
sysInfoType11-v4b0ext SysInfo
                   OPTIONAL.
                          v6b0NonCriticalExtensions SEQUENCE {
sysInfoType11-v690ext SysInfoType11-v690ext SysInfoType11-v600ext SysInfo
                                                                                             SysInfoType11-v6b0ext-IEs,
                                       v770NonCriticalExtensions
                                                                                            SEQUENCE {
                                              sysInfoType11-v770ext
                                                                                                   SysInfoType11-v770ext-IEs,
                                              v7b0NonCriticalExtensions
                                                                                                    SEQUENCE {
                                                     sysInfoType11-v7b0ext
                                                                                                          SysInfoType11-v7b0ext-IEs,
                                                                                                          SEQUENCE {}
                                                     nonCriticalExtensions
                                                                                                                                                 OPTIONAL
                                              }
                                                                                            OPTIONAL
                                       }
                                                                                     OPTIONAL
                                }
                                                                               OPTIONAL
                         }
                                                                         OPTIONAL
                   }
                                                                  OPTIONAL
                                                           OPTIONAL
}
SysInfoType11-v4b0ext-IEs ::= SEQUENCE {
      fach-MeasurementOccasionInfo-LCR-Ext
                                                                         FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
      {\tt measurementControlSysInfo-LCR}
                                                                         MeasurementControlSysInfo-LCR-r4-ext
SysInfoType11-v590ext-IEs ::= SEQUENCE {
       --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
      CellSelectReselectInfo-v590ext OPTIONAL,
       --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
      newInterFrequencyCellInfoList-v590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
```

```
CellSelectReselectInfo-v590ext OPTIONAL,
        -- The order of the list corresponds to the order of cell in newInterRATCellInfoList
       newInterRATCellInfoList-v590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                                                            CellSelectReselectInfo-v590ext OPTIONAL,
       intraFreqEventCriteriaList-v590ext intraFreqEventCriteriaList-v590ext OPTIONAL, intraFreqEvent-1d-r5 IntraFreqEvent-1d-r5 OPTIONAL, intraFreqEvent-1d-r5 IntraFreqEvent-1d-r5 OPTIONAL,
       intraFreqEvent-1d-r5
                                                                                     IntraFreqEvent-1d-r5
                                                                                                                                                          OPTIONAL
}
SysInfoType11-v690ext-IEs ::= SEQUENCE {
       -- dummy is not used in this version of the specification. If received, the UE behaviour
        -- is not specified.
       dummy
                                                                          Dummy-InterFreqRACHReportingInfo OPTIONAL
}
SysInfoType11-v6b0ext-IEs ::= SEQUENCE {
        -- Measurement IEs
                                                                  InterFreqRACHReportingInfo OPTIONAL
       interFreqRACHReportingInfo
}
{\tt SysInfoType11-v770ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
        -- Measurement IEs
               mbsfnFrequencyList
                                                                          MBSFNFrequencyList
                                                                                                                                                  OPTIONAL
}
SysInfoType11-v7b0ext-IEs ::= SEQUENCE {
       -- Measurement IEs
              newInterFreqCellList NewInterFreqCellList-v7b0ext OPTIONAL
}
SysInfoType11bis ::=
                                                                    SEQUENCE {
       -- Measurement IEs
               measurementControlSysInfo
                                                                             MeasurementControlSysInfoExtension
                                                                                                                                                                   OPTIONAL,
               measurementControlSysInfo-LCR MeasurementControlSysInfoExtension-LCR-r4 OPTIONAL,
               {\tt measurementControlSysInfoExtensionAddon-r5}
                                                                            MeasurementControlSysInfoExtensionAddon-r5 OPTIONAL,
        -- Extension mechanism for non-release99 information
              v7b0NonCriticalExtensions SEQUENCE {
    sysInfoType11bis-v7b0ext SysInfoType11bis-v7b0ext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTION
                                                                                                                                   OPTIONAL
                             OPTIONAL
}
{\tt SysInfoType11bis-v7b0ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
       -- Measurement IEs
              newInterFreqCellList
                                                                          NewInterFreqCellList-v7b0ext
                                                                                                                                                 OPTIONAL
}
SysInfoType12 ::=
                                                                  SEQUENCE {
       -- Measurement IEs
               fach-MeasurementOccasionInfo
measurementControlSysInfo

fach-MeasurementOccasionInfo
MeasurementControlSysInfo,
                                                                                                                                                 OPTIONAL,
               measurementControlSysInfo
              The abstraction mechanism for non-release99 information

v4b0NonCriticalExtensions SEQUENCE {
    sysInfoType12-v4b0ext SysInfoType12-v4b0ext-IES OPTIONAL,
    v590NonCriticalExtension SEQUENCE {
        sysInfoType12-v590ext SysInfoType12-v590ext-IES,
        v690NonCriticalExtensions SEQUENCE {
        sysInfoType12-v690ext SysInfoType12-v690ext-IES,
        v6b0NonCriticalExtensions SEQUENCE {
        sysInfoType12-v6b0ext SysInfoType12-v6b0ext-IES,
        v7b0NonCriticalExtensions SEQUENCE {
        sysInfoType12-v7b0ext SysInfoType12-v7b0ext-IES,
        nonCriticalExtensions SEQUENCE {
        SysInfoType12-v7b0ext SysInfoType12-v7b0ext-IES,
        nonCriticalExtensions SEQUENCE {
        SysInfoType12-v7b0ext SysInfoType12-v7b0ext-IES,
        nonCriticalExtensions SEQUENCE {
        SysInfoType12-v7b0ext-IES,
       -- Extension mechanism for non- release99 information
                                                     sysIntoType12~~~~~
nonCriticalExtensions S
OPTIONAL
                                                                                                                                                 OPTIONAL
                                              }
                                      }
                                                                                            OPTIONAL
                              }
                                                                                    OPTIONAL
                      }
                                                                            OPTIONAL
                                                                    OPTIONAL
}
SysInfoType12-v4b0ext-IEs ::= SEQUENCE {
      fach-MeasurementOccasionInfo-LCR-Ext
                                                                                    FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL.
       measurementControlSysInfo-LCR
                                                                                 MeasurementControlSysInfo-LCR-r4-ext
SysInfoType12-v590ext-IEs ::= SEQUENCE {
        --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
```

```
newIntraFrequencyCellInfoList-v590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
                                               CellSelectReselectInfo-v590ext OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
   newInterFrequencyCellInfoList-v590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
                                               CellSelectReselectInfo-v590ext OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterRATCellInfoList
   newInterRATCellInfoList-v590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
                                               CellSelectReselectInfo-v590ext OPTIONAL,
   intraFreqEventCriteriaList-v590ext Intra-FreqEventCriteriaList-v590ext OPTIONAL, intraFreqReportingCriteria-1b-r5 IntraFreqReportingCriteria-1b-r5 OPTIONAL,
                                           IntraFreqReportingCriteria-1b-r5 OPTIONAL, IntraFreqEvent-1d-r5 OPTIONAL
    intraFreqEvent-1d-r5
                                           IntraFreqEvent-1d-r5
}
SysInfoType12-v690ext-IEs ::= SEQUENCE {
   -- dummy is not used in this version of the specification. If received, the UE behaviour
    -- is not specified.
                                        Dummy-InterFreqRACHReportingInfo OPTIONAL
    dummy
SysInfoType12-v6b0ext-IEs ::= SEQUENCE {
    -- Measurement IEs
    interFreqRACHReportingInfo
                                       InterFreqRACHReportingInfo
                                                                          OPTIONAL
SysInfoType12-v7b0ext-IEs ::= SEQUENCE {
    -- Measurement IEs
       newInterFreqCellList
                                      NewInterFreqCellList-v7b0ext
                                                                          OPTIONAL
}
                                  SEQUENCE {
SysInfoType13 ::=
    -- Core network IEs
                                      CN-DomainSysInfoList,
       cn-DomainSysInfoList
    -- User equipment IEs

    ue-IdleTimersAndConstants
    UE-IdleTimersAndConstants

    capabilityUpdateRequirement
    CapabilityUpdateRequirement

       ue-IdleTimersAndConstants
                                                                          OPTIONAL.
                                                                          OPTIONAL,
    -- Extension mechanism for non- release99 information
       v3a0NonCriticalExtensions SEQUENCE {
    sysInfoType13-v3a0ext SysInfoType
           SysInfoType13-v4b0ext-IEs,
            -- Extension mechanism for non- release99 information
               SysInfoType13-v770ext-IEs,
                                                   SEQUENCE {}
                                                                                    OPTIONAL
           }
                                       OPTIONAL
        }
                                   OPTIONAL
}
SysInfoType13-v3a0ext-IEs ::= SEQUENCE {
   ue-IdleTimersAndConstants-v3a0ext
                                           UE-IdleTimersAndConstants-v3a0ext
SysInfoType13-v4b0ext-IEs ::= SEQUENCE {
   capabilityUpdateRequirement-r4Ext CapabilityUpdateRequirement-r4-ext OPTIONAL
SysInfoType13-v770ext-IEs ::= SEQUENCE {
   capabilityUpdateRequirement
                                        CapabilityUpdateRequirement-v770ext OPTIONAL
SysInfoType13-1 ::=
                                   SEQUENCE {
   -- ANSI-41 IEs
       ansi-41-RAND-Information ANSI-41-RAND-Information,
    -- Extension mechanism for non- release99 information
                                   SEQUENCE {}
       nonCriticalExtensions
                                                                            OPTIONAL
}
                                  SEQUENCE {
SysInfoType13-2 ::=
    -- ANSI-41 IEs
       ansi-41-UserZoneID-Information ANSI-41-UserZoneID-Information,
    -- Extension mechanism for non- release99 information
                                       SEQUENCE {}
                                                                            OPTIONAL
       nonCriticalExtensions
}
                                   SEQUENCE {
SysInfoType13-3 ::=
    -- ANSI-41 IEs
       ansi-41-PrivateNeighbourListInfo ANSI-41-PrivateNeighbourListInfo,
```

```
-- Extension mechanism for non- release99 information
        OPTIONAL
}
SysInfoType13-4 ::=
                                     SEQUENCE {
   -- ANSI-41 IEs
        ansi-41-GlobalServiceRedirectInfo
                                         ANSI-41-GlobalServiceRedirectInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions
                                         SEQUENCE {}
                                                                               OPTIONAL
}
SysInfoType14 ::=
                                    SEQUENCE {
    -- Physical channel IEs
        individualTS-InterferenceList IndividualTS-InterferenceList, expirationTimeFactor ExpirationTimeFactor
                                                                               OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions
                                         SEQUENCE {}
                                                                               OPTIONAL
}
                                      SEQUENCE {
SysInfoType15 ::=
    -- Measurement IEs
        ue-positioning-GPS-CipherParametersUE-Positioning-CipherParametersOPTIONAL,ue-positioning-GPS-ReferenceLocationReferenceLocation,
        ue-positioning-GPS-ReferenceTime UE-Positioning-GPS-ReferenceTime, ue-positioning-GPS-Real-timeIntegrity BadSatList
        ue-positioning-GPS-Real-timeIntegrity
                                                                                             OPTIONAL,
    -- Extension mechanism for non- release99 information
        v4b0NonCriticalExtensions SEQUENCE {
    sysInfoType15-v4b0ext SysInfoType15-v4b0ext-IEs,
        -- Extension mechanism for non- release4 information
            v770NonCriticalExtensions SEQUENCE {
   sysInfoType15-v770ext SysInfoType15-v770ext-IEs,
   nonCriticalExtensions SEQUENCE {} OP
                                                      SEQUENCE {} OPTIONAL
                OPTIONAL
        ) OPTIONAL
}
SysInfoType15-v4b0ext-IEs ::= SEQUENCE {
                                UE-Positioning-IPDL-Parameters-TDD-r4-ext OPTIONAL
    up-Ipdl-Parameters-TDD
}
SysInfoType15-v770ext-IEs ::= SEQUENCE {
    -- Measurement IEs
                                            UE-Positioning-GPS-ReferenceTime-v770ext
        ue-Positioning-GPS-ReferenceTime
}
                                    SEQUENCE {
SysInfoType15bis ::=
    -- Measurement IEs
        ue-positioning-GANSS-ReferencePosition ReferenceLocationGANSS,
        ue-positioning-GANSS-ReferenceTime UE-Positioning-GANSS-ReferenceTime, ue-positioning-GANSS-IonosphericModel UE-Positioning-GANSS-IonosphericModel OPTIONAL,
    -- Extension mechanism for non-release99 information
       nonCriticalExtensions
                                         SEQUENCE {}
                                                                  OPTIONAL
}
                                     SEQUENCE {
SysInfoType15-1 ::=
    -- DGPS corrections
        ue-positioning-GPS-DGPS-Corrections
                                                     UE-Positioning-GPS-DGPS-Corrections,
    -- Extension mechanism for non- release99 information
                                         SEQUENCE {}
        nonCriticalExtensions
                                                                  OPTIONAL
}
SysInfoType15-1bis ::=
                                    SEQUENCE {
    -- Measurement IEs
        ue-positioning-GANSS-DGANSS-Corrections UE-Positioning-DGANSSCorrections,
    -- Extension mechanism for non-release99 information
        nonCriticalExtensions
                                         SEQUENCE {}
                                                                  OPTIONAL
}
                                     SEQUENCE {
SysInfoType15-2 ::=
    -- Ephemeris and clock corrections
        transmissionTOW
                                         GPS-TOW-1sec,
        satID
                                         SatID,
                                         EphemerisParameter,
        ephemerisParameter
    -- Extension mechanism for non- release99 information
       nonCriticalExtensions
                                         SEQUENCE {}
                                                             OPTIONAL
}
```

```
SysInfoType15-2bis ::=
                                                                   SEQUENCE {
       -- Measurement IEs
              ue-positioning-GANSS-navigationModel
                                                                                           UE-Positioning-GANSS-NavigationModel,
        -- Extension mechanism for non-release99 information
               nonCriticalExtensions
                                                                           SEQUENCE {}
                                                                                                                          OPTIONAL
}
                                                                   SEQUENCE {
SysInfoType15-3 ::=
        -- Almanac and other data
               transmissionTOW
                                                                                                    GPS-TOW-1sec,
               ue-positioning-GPS-Almanac
                                                                                                   UE-Positioning-GPS-Almanac
       OPTIONAL.
               ue-positioning-GPS-IonosphericModel
                                                                                                 UE-Positioning-GPS-IonosphericModel
       OPTIONAL,
              ue-positioning-GPS-UTC-Model
                                                                                                   UE-Positioning-GPS-UTC-Model
       OPTIONAL,
               satMask
                                                                         BIT STRING (SIZE (1..32)) OPTIONAL,
                                                                           BIT STRING (SIZE (8)) OPTIONAL,
               lsbTOW
        -- Extension mechanism for non- release99 information
              nonCriticalExtensions
                                                                           SEQUENCE {}
                                                                                                                                  OPTIONAL
}
SysInfoType15-3bis ::=
                                                                 SEQUENCE {
        -- Measurement IEs
               ue-positioning-GANSS-Almanac
               ue-positioning-GANSS-AlmanacUE-Positioning-GANSS-AlmanacOPTIONAL,ue-positioning-GANSS-TimeModelsUE-Positioning-GANSS-TimeModelsOPTIONAL,ue-positioning-GANSS-UTC-ModelUE-Positioning-GANSS-UTCModelOPTIONAL,
        -- Extension mechanism for non-release99 information
              nonCriticalExtensions
                                                                           SEQUENCE {}
}
                                                                   SEQUENCE {
SysInfoType15-4 ::=
        -- Measurement IEs
               {\tt ue-positioning-OTDOA-CipherParameters} \qquad {\tt UE-Positioning-CipherParameters}
                                                                                                                                                                         OPTIONAL,
               ue-positioning-OTDOA-AssistanceData
                                                                                         UE-Positioning-OTDOA-AssistanceData,
               v3a0NonCriticalExtensions SEQUENCE {
    sysInfoType15-4-v3a0ext SysInf
                                                                                      SysInfoType15-4-v3a0ext,
               -- Extension mechanism for non- release99 information v4b0NonCriticalExtensions SEQUENCE {
    sysInfoType15-4-v4b0ext SysInfoType15-4-v4b0ext nonCriticalExtensions SEQUENCE }
                                                                                          SysInfoType15-4-v4b0ext,
                              nonCriticalExtensions
                                                                                                   SEQUENCE { } OPTIONAL
                             OPTIONAL
                     OPTIONAL
SysInfoType15-4-v3a0ext ::= SEQUENCE {
       sfn-Offset-Validity SFN-Offset-Validity OPTIONAL
SysInfoType15-4-v4b0ext ::= SEQUENCE {
       ue-Positioning-OTDOA-AssistanceData-r4ext UE-Positioning-OTDOA-AssistanceData-r4ext OPTIONAL
                                                                  SEQUENCE {
SysInfoType15-5 ::=
       -- Measurement IEs
               ue-positioning-OTDOA-AssistanceData-UEB UE-Positioning-OTDOA-AssistanceData-UEB,
               v3a0NonCriticalExtensions SEQUENCE {
    sysInfoType15-5-v3a0ext SysInf
                                                                                         SysInfoType15-5-v3a0ext,
                       -- Extension mechanism for non- release99 information
                      v770NonCriticalExtensions SEQUENCE {
    sysInfoType15-5-v770ext SysInfoType15
                                                                                           SysInfoType15-5-v770ext-IEs, SEQUENCE {} OPTIONAL
                              nonCriticalExtensions
                              OPTIONAL
               ) OPTIONAL
}
SysInfoType15-5-v3a0ext ::= SEQUENCE {
       sfn-Offset-Validity
                                               SFN-Offset-Validity OPTIONAL
SysInfoType15-5-v770ext-IEs ::= SEQUENCE {
       ue-Positioning-OTDOA-AssistanceData-UEB-ext
                                                                                    UE-Positioning-OTDOA-AssistanceData-UEB-ext
                                                                                                                                                                                OPTIONAL
SysInfoType15-6 ::=
                                                                   SEQUENCE {
       -- Measurement IEs
              ue-positioning-GANSS-TOD
                                                                          INTEGER (0..86399),
```

```
\verb"ue-positioning-GANSS-ReferenceMeasurementInformation"
                                         UE-Positioning-GANSS-ReferenceMeasurementInfo,
    -- Extension mechanism for non-release99 information
                                          SEQUENCE {}
        nonCriticalExtensions
                                                                   OPTIONAL
}
SysInfoType15-7 ::=
                                     SEQUENCE {
    -- Measurement IEs
        \hbox{\tt ue-positioning-GANSS-Data-Bit-Assistance} \quad \hbox{\tt UE-Positioning-GANSS-Data-Bit-Assistance},
    -- Extension mechanism for non-release99 information
        nonCriticalExtensions
                                         SEQUENCE {}
                                                                   OPTIONAL
}
SysInfoType15-8 ::=
                                     SEQUENCE {
    -- Measurement IEs
       ue-positioning-GANSS-DataCipheringInfo UE-Positioning-CipherParameters OPTIONAL,
        ue-positioning-GANSS-realTimeIntegrity UE-Positioning-GANSS-RealTimeIntegrity OPTIONAL,
    -- Extension mechanism for non-release99 information
                                         SEQUENCE {}
                                                                   OPTIONAL
       nonCriticalExtensions
}
                                    SEQUENCE {
SysInfoType16 ::=
    -- Radio bearer IEs
        preDefinedRadioConfiguration PreDefRadioConfiguration,
    -- Extension mechanism for non- release99 information
       v770NonCriticalExtensions SEQUENCE {
    sysInfoType16-v770ext SysInfoType16-v770ext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTION
                                                                   OPTIONAL
        } OPTIONAL
}
SysInfoType16-v770ext-IEs ::= SEQUENCE {
        preDefinedRadioConfiguration
                                          PreDefRadioConfiguration-v770ext
}
SysInfoType17 ::=
                                     SEQUENCE {
    -- Physical channel IEs
        -- If PDSCH/PUSCH is configured for 1.28Mcps or 7.68Mcps TDD, pusch-SysInfoList and
        -- pdsch-SysInfoList should be absent and the info included in the respective
        -- tdd128SpecificInfo or tdd768SpecificInfo instead.
        -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
        -- included.
                                          PUSCH-SysInfoList
        pusch-SysInfoList
                                                                            OPTIONAL.
                                        PDSCH-SysInfoList
        pdsch-SysInfoList
                                                                            OPTIONAL,
    -- Extension mechanism for non- release99 information
        v4b0NonCriticalExtensions SEQUENCE {
    sysInfoType17-v4b0ext SysInf
                                           SysInfoType17-v4b0ext-IEs,
            v590NonCriticalExtensions SEQUENCE {
   sysInfoType17-v590ext Sy
   v770NonCriticalExtensions SEQ
                                                  SysInfoType17-v590ext-IEs OPTIONAL,
                                                  SEQUENCE {
                    sysInfoType17-v770ext
                                                      SysInfoType17-v770ext-IEs,
                     nonCriticalExtensions
                                                      SEQUENCE {}
                                                                               OPTIONAL
                                             OPTIONAL
            }
                                          OPTIONAL
        }
                                     OPTIONAL
}
SysInfoType17-v4b0ext-IEs ::= SEQUENCE {
        pusch-SysInfoList
    tdd128SpecificInfo
                                     PUSCH-SysInfoList-LCR-r4
                                                                         OPTIONAL.
        pdsch-SysInfoList
                                         PDSCH-SysInfoList-LCR-r4
                                                                           OPTIONAL
                                                                            OPTIONAL
}
SysInfoType17-v590ext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo SEQUENCE {
   pusch-SysInfoList PUSCH-SysI
                                      PUSCH-SysInfoList-HCR-r5
        pdsch-SysInfoList
                                     PDSCH-SysInfoList-HCR-r5
                                                                   OPTIONAL
                                                                   OPTIONAL
}
SysInfoType17-v770ext-IEs ::=
                                     SEQUENCE {
    tdd768SpecificInfo
                                     SEQUENCE {
        pusch-SysInfoList-SFN
                                                                              OPTIONAL,
                                            PUSCH-SysInfoList-SFN-VHCR
        pdsch-SysInfoList-SFN
                                              PDSCH-SysInfoList-VHCR-r7
                                                                                OPTIONAL
            OPTIONAL
}
```

```
SEQUENCE {
SysInfoType18 ::=
                                                                            PLMNIdentitiesOfNeighbourCells
               idleModePLMNIdentities
                                                                                                                                                OPTIONAL,
               connectedModePLMNIdentities PLMNIdentitiesOfNeighbourCells
                                                                                                                                       OPTIONAL,
        -- Extension mechanism for non- release99 information
               SEQUENCE {} OPTIONAL
                } OPTIONAL
}
               idleModePLMNIdentitiesSIB11bis PI.MNTA
SysInfoType18-v6b0ext ::=
               idleModePLMNIdentitiesSIB11bis PLMNIdentitiesOfNeighbourCells OPTIONAL, connectedModePLMNIdentitiesSIB11bis PLMNIdentitiesOfNeighbourCells OPTIONAL
}
SysInfoTypeSB1 ::=
                                                                   SEQUENCE {
        -- Other IEs
               sib-ReferenceList
                                                                            SIB-ReferenceList,
        -- Extension mechanism for non- release99 information
              OPTIONAL
                } OPTIONAL
}
SysInfoTypeSB1-v6b0ext ::=
                                                                    SEQUENCE {
        extSIBTypeInfoSchedulingInfo-List ExtSIBTypeInfoSchedulingInfo-List
                                                                                                                                                         OPTIONAL
SysInfoTypeSB2 ::=
                                                                    SEQUENCE {
        -- Other IEs
                                                                            SIB-ReferenceList,
               sib-ReferenceList
        -- Extension mechanism for non- release99 information
               v6b0NonCriticalExtensions SEQUENCE {
   sysInfoTypeSB2-v6b0ext SysIn
                                                                            SysInfoTypeSB2-v6b0ext,
                       nonCriticalExtensions
                                                                                     SEQUENCE {}
                                                                                                                                                           OPTIONAL
                } OPTIONAL
}
                                                         SEQUENCE {
SysInfoTypeSB2-v6b0ext ::=
        extSIBTypeInfoSchedulingInfo-List ExtSIBTypeInfoSchedulingInfo-List
                                                                                                                                                        OPTIONAL
TDD-UMTS-Frequency-List ::=
                                                                            SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
                                                                                    FrequencyInfoTDD
-- For systemInformationBlockType11bis the Value Tag Info "CellValueTag" is used
ValueTagInfo ::= CHOICE {
                                                                             NULL,
        none
       cellValueTag
                                                                             CellValueTag,
       plmn-ValueTag
                                                                             PLMN-ValueTag,
        sIBOccurrenceIdentityAndValueTag
                                                                            SIBOccurrenceIdentityAndValueTag
}
 __ ***************
             ANSI-41 INFORMATION ELEMENTS (10.3.9)
 __ ****************
ANSI-41-GlobalServiceRedirectInfo ::= ANSI-41-NAS-Parameter
ANSI-41-PrivateNeighbourListInfo ::= ANSI-41-NAS-Parameter
ANSI-41-RAND-Information ::= ANSI-41-NAS-Parameter
ANSI-41-UserZoneID-Information ::= ANSI-41-NAS-Parameter
ANSI-41-NAS-Parameter ::=
                                                                            BIT STRING (SIZE (1..2048))
Min-P-REV ::=
                                                                            BIT STRING (SIZE (8))
                                                                            ANSI-41-NAS-Parameter
NAS-SystemInformationANSI-41 ::=
NID ::=
                                                                             BIT STRING (SIZE (16))
P-REV ::=
                                                                             BIT STRING (SIZE (8))
SID ::=
                                                                             BIT STRING (SIZE (15))
 __ ********************
            MBMS INFORMATION ELEMENTS (10.3.9a)
```

```
__ ***************
MBMS-AccessProbabilityFactor ::= ENUMERATED {
                                             apf0, apf32, apf64, apf96, apf128, apf160, apf192,
                                             apf224, apf256, apf288, apf320, apf352, apf384, apf416,
                                             apf448, apf480, apf512, apf544, apf576, apf608, apf640, apf672, apf704, apf736, apf768, apf800, apf832, apf864,
                                             apf896, apf928, apf960, apf1000 }
MBMS-CellGroupIdentity-r6 ::=
                                       BIT STRING (SIZE (12))
MBMS-CommonCCTrChIdentity ::=
                                       INTEGER (1..32)
MBMS-CommonPhyChIdentity ::=
                                       INTEGER (1..32)
MBMS-CommonRBIdentity ::=
                                       INTEGER (1..32)
{\tt MBMS-CommonRBInformation-r6} ::= \\ {\tt SEQUENCE} \ \big\{
   commonRBIdentity pdcp-Info
                                        MBMS-CommonRBIdentity,
                                            PDCP-Info-r4,
   rlc-Info
                                            RLC-Info-MTCH-r6
MBMS-CommonRBInformationList-r6 ::= SEQUENCE (SIZE (1..maxMBMS-CommonRB)) OF
                                            MBMS-CommonRBInformation-r6
MBMS-CommonTrChIdentity ::=
                                      INTEGER (1..32)
MBMS-ConnectedModeCountingScope ::= SEQUENCE {
    countingForUraPCH
                                                          BOOLEAN,
    {\tt countingForCellPCH}
    countingForCellFACH
                                                          BOOLEAN
}
MBMS-CurrentCell-SCCPCH-r6 ::= SEQUENCE {
    sccpchIdentity MBMS-SCCPCHIdentity
secondaryCCPCH-Info MBMS-CommonPhyChIdentity,
softComb-TimingOffset MBMS-SoftComb-TimingOffset
  sccpchIdentity
                                                                                    OPTIONAL,
                                                                                   OPTIONAL,
    -- If the IE transpCh-InfoCommonForAllTrCh is absent, the default TFCS as specified
    -- in 14.10.1 applies
    -- in 14.10.1 applies
transpCh-InfoCommonForAllTrCh
transpCHInformation

MBMS-CommonCCTrChIdentity
MBMS-TrCHInformation-CurrList
                                                                                    OPTIONAL.
MBMS-CurrentCell-SCCPCHList-r6 ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                            MBMS-CurrentCell-SCCPCH-r6
{\tt MBMS-FACHCarryingMTCH-List} ::= {\tt SEQUENCE} \ ({\tt SIZE} \ ({\tt 1..maxFACHPCH})) \ {\tt OF}
                                        TransportFormatSet
\label{eq:mbms-joinedInformation-r6} \texttt{MBMS-JoinedInformation-r6} ::= \\ \texttt{SEQUENCE} \ \big\{
                                          P-TMSI-GSM-MAP
                                                                                    OPTIONAL
MBMS-L1CombiningSchedule-32 ::= SEQUENCE {
   -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
    INTEGER (1..8)
        periodDuration
}
MBMS-L1CombiningSchedule-64 ::= SEQUENCE {
    -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
    cycleOffset INTEGER (0..15) OPTIONAL,
mtch-L1CombiningPeriodList SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF SEQUENCE {
   periodStart INTEGER (0..15),
   periodDuration INTEGER (1..16)
}
MBMS-L1CombiningSchedule-128 ::= SEQUENCE {
    -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
    cycleOffset INTEGER (0..31) OPTIONAL,
mtch-L1CombiningPeriodList SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF SEQUENCE {
    periodStart INTEGER (0..31).
```

```
periodDuration
                                           INTEGER (1..32)
    }
}
MBMS-L1CombiningSchedule-256 ::= SEQUENCE {
   -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
    cycleOffset
                                       INTEGER (0..63)
   mtch-L1CombiningPeriodList
periodStart
                                                                            OPTIONAL.
                                       SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF SEQUENCE {
                                            INTEGER (0..63),
       periodDuration
                                            INTEGER (1..64)
}
MBMS-L1CombiningSchedule-512 ::= SEQUENCE {
    -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
   mtch-LlCombiningPeriodList SEQUENCE (ST7F /1
                                                                               OPTIONAL.
                                       SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF SEQUENCE {
       periodStart
                                            INTEGER (0..127),
                                            INTEGER (1..128)
       periodDuration
}
MBMS-L1CombiningSchedule-1024 ::= SEQUENCE {
    -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
                                        INTEGER (0..255)
    cvcleOffset
                                                                                OPTIONAL.
                                        SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF SEQUENCE {
   mtch-L1CombiningPeriodList
       periodStart
                                            INTEGER (0..255),
       periodDuration
                                            INTEGER (1..256)
}
MBMS-L1CombiningSchedule ::=
                                   CHOICE {
   cycleLength-32
                                       MBMS-L1CombiningSchedule-32,
                                        MBMS-L1CombiningSchedule-64,
    cycleLength-64
                                       MBMS-L1CombiningSchedule-128,
    cycleLength-128
    cycleLength-256
                                        MBMS-L1CombiningSchedule-256,
    cycleLength-512
                                       MBMS-L1CombiningSchedule-512,
    cycleLength-1024
                                        MBMS-L1CombiningSchedule-1024
}
MBMS-L1CombiningTransmTimeDiff ::= INTEGER (0..3)
MBMS-L23Configuration ::=
                                  CHOICE {
    {\tt sameAsCurrent}
                                        SEQUENCE {
       currentCell-SCCPCH
                                        MBMS-SCCPCHIdentity,
       msch-ConfigurationInfo
                                            MBMS-MSCH-ConfigurationInfo-r6
                                                                               OPTIONAL
    different
                                       SEQUENCE {
       -- If the IE transpCh-InfoCommonForAllTrCh is absent, the default TFCS as specified
        -- in 14.10.1 applies
       -- in 14.10.1 applies
transpCh-InfoCommonForAllTrCh
                                            MBMS-CommonCCTrChIdentity
                                                                                OPTIONAL,
        transpCHInformation
                                            MBMS-TrCHInformation-NeighbList
}
MBMS-LogicalChIdentity ::=
                                   INTEGER (1..15)
MBMS-MCCH-ConfigurationInfo-r6 ::= SEQUENCE {
   accessInfoPeriodCoefficient INTEGER (0..3), repetitionPeriodCoefficient INTEGER (0..3),
                                        INTEGER (0..3),
    modificationPeriodCoefficient
                                        INTEGER (7..10),
    rlc-Info
                                        RLC-Info-MCCH-r6,
    tctf-Presence
                                        MBMS-TCTF-Presence
                                                                            OPTIONAL
}
MBMS-MICHConfigurationInfo-r6 ::= SEQUENCE {
    michPowerOffset
                                        MBMS-MICHPowerOffset,
                                        CHOICE {
    mode
        fdd
                                            SEOUENCE {
           channelisationCode256
                                                ChannelisationCode256,
            ni-CountPerFrame
                                                MBMS-NI-CountPerFrame,
           sttd-Indicator
                                                BOOLEAN
        -- The CHOICE tdd384 is used for both tdd384 and tdd768. If IE
        -- 'MBMS-MICHConfigurationInfo-v770ext' is not present, tdd384 applies.
                                          SEQUENCE {
            timeslot
                                                TimeslotNumber.
                                                MidambleShiftAndBurstType,
            midambleShiftAndBurstType
```

```
DL-TS-ChannelisationCode,
            channelisationCode
            repetitionPeriodLengthOffset
                                                 RepPerLengthOffset-MICH
                                                                              OPTIONAL,
            mbmsNotificationIndLength
                                                 MBMS-MICHNotificationIndLength DEFAULT mn4
        tdd128
                                              SEOUENCE {
            timeslot
                                                TimeslotNumber-LCR-r4,
                                                 MidambleShiftAndBurstType-LCR-r4,
            midambleShiftAndBurstType
                                                 SEQUENCE (SIZE (1..2)) OF
            channelisationCodeList
                                                    DL-TS-ChannelisationCode,
            repetitionPeriodLengthOffset
                                                 RepPerLengthOffset-MICH OPTIONAL,
            mbmsNotificationIndLength
                                                 MBMS-MICHNotificationIndLength DEFAULT mn4
    }
}
MBMS-MICHConfigurationInfo-v770ext ::= SEQUENCE {
                                         CHOICE {
        -- For tdd384, IE 'MidambleShiftAndBurstType-r7' replaces IE 'MidambleShiftAndBurstType'
        -- in IE 'MBMS-MICHConfigurationInfo-r6'. IE 'MidambleShiftAndBurstType' shall be ignored.
        tdd384
                                             SEQUENCE {
            midambleShiftAndBurstType
                                                 MidambleShiftAndBurstType-r7
         -- For tdd768, the CHIOCE tdd384 in IE 'MBMS-MICHConfigurationInfo-r6' applies, except
        -- that IE 'MidambleShiftAndBurstType-VHCR' replaces IE 'MidambleShiftAndBurstType'. IE
        -- 'MidambleShiftAndBurstType' shall be ignored.
        tdd768
                                            SEQUENCE {
            midambleShiftAndBurstType
                                                MidambleShiftAndBurstType-VHCR
        tdd128
                                            SEQUENCE {
            mbsfnSpecialTimeSlot
                                                 TimeSlotLCR-ext
                                                                                 OPTIONAL
    }
}
MBMS-MICHNotificationIndLength ::= ENUMERATED { mn4, mn8, mn16 }
MBMS-MICHPowerOffset ::=
                                    INTEGER (-10..5)
MBMS-ModifedService-r6 ::= SEQUENCE {
   mbms-TransmissionIdentity MBMS-T:
   mbms-RequiredUEAction MBMS-Re
   mbms-PreferredFrequency CHOICE
                                     MBMS-TransmissionIdentity,
                                         MBMS-RequiredUEAction-Mod,
                                         CHOICE {
                                             MBMS-PFLIndex,
       mcch
       dcch
                                             MBMS-PFLInfo
         OPTIONAL,
     --dummy is not used. If received it shall be ignored.
                                         ENUMERATED { true }
    dummy
                                                                             OPTIONAL.
    continueMCCHReading
                                         BOOLEAN
MBMS-ModifedServiceList-r6 ::= SEQUENCE (SIZE (1..maxMBMSservModif)) OF
                                        MBMS-ModifedService-r6
{\tt MBMS-ModifiedService-v770ext} \ ::= \ \ {\tt SEQUENCE} \ \big\{
                                     MBSFN-ClusterFrequency-r7 OPTIONAL
   mbsfnClusterFrequency
}
MBMS-ModifiedService-LCR-v7c0ext ::= SEQUENCE {
   rbReleaseCause
                                         MBMS-PTM-RBReleaseCause-LCR-r7
                                                                             OPTIONAL
-- IE 'MBMS-ModifiedServiceList-v770ext' contains a list of extension data
-- associated with the MBMS transmission identities at the corresponding
-- positions in IE 'MBMS-ModifedServiceList-r6'
\verb|MBMS-ModifiedServiceList-v770ext|::= SEQUENCE (SIZE (1..maxMBMSservModif)) OF
                                         MBMS-ModifiedService-v770ext
-- IE 'MBMS-ModifiedServiceList-v7c0ext' contains a list of extension data
-- associated with the MBMS transmission identities at the corresponding -- positions in IE 'MBMS-ModifedServiceList-r6'
MBMS-ModifiedServiceList-LCR-v7c0ext ::= SEQUENCE (SIZE (1..maxMBMSservModif)) OF
                                         MBMS-ModifiedService-LCR-v7c0ext
MBMS-MSCH-ConfigurationInfo-r6 ::= SEQUENCE {
                                         MBMS-MSCHSchedulingInfo
   mschShedulingInfo
                                                                              OPTIONAL,
    rlc-Info
                                         RLC-Info-MSCH-r6
                                                                              OPTIONAL,
    tctf-Presence
                                         MBMS-TCTF-Presence
                                                                              OPTIONAL
}
```

```
s-MsCHSchedulingInfo ::= CHOICE {
schedulingPeriod-32-Offset INTEGER (0..31),
schedulingPeriod-64-Offset INTEGER (0..63)
MBMS-MSCHSchedulingInfo ::=
    schedulingPeriod-128-Offset
                                      INTEGER (0..127),
INTEGER (0..255),
    schedulingPeriod-256-Offset
                                   INTEGER (0..511),
INTEGER (0..1023)
    schedulingPeriod-512-Offset
    schedulingPeriod-1024-Offset
}
MBMS-NeighbouringCellSCCPCH-r6 ::= SEQUENCE {
    secondaryCCPCH-Info
                                         MBMS-CommonPhyChIdentity,
    secondaryCCPCHPwrOffsetDiff
                                         MBMS-SCCPCHPwrOffsetDiff
                                                                               OPTIONAL,
    layer1Combining
                                         CHOICE {
                                      SEQUENCE {
        fdd
                                               MBMS-SoftComb-TimingOffset,
            softComb-TimingOffset
            mbms-L1CombiningTransmTimeDiff
                                                  MBMS-L1CombiningTransmTimeDiff,
            mbms-L1CombiningSchedule
                                                  MBMS-L1CombiningSchedule
                                                                               OPTIONAL
                                              NULL
        tdd
    }
            OPTIONAL.
    mbms-L23Configuration
                                         MBMS-L23Configuration
}
MBMS-NeighbouringCellSCCPCH-v770ext ::= SEQUENCE {
    secondaryCCPCH-Info MBMS-CommonPhyChIdentity
secondaryCCPCH-InfoDiff SecondaryCCPCHInfoDiff-MBMS,
secondaryCCPCHPwrOffsetDiff MBMS-SCCPCHPwrOffsetDiff
layer1Combining CHOICE {
                                                                               OPTIONAL,
                                                                                OPTIONAL,
            softComb-TimingOffset
mbms-L1Combinity
        fdd
                                                 MBMS-SoftComb-TimingOffset,
            mbms-L1CombiningTransmTimeDiff
                                                  MBMS-L1CombiningTransmTimeDiff,
            mbms-L1CombiningSchedule
                                                  MBMS-L1CombiningSchedule
                                                                             OPTIONAL
                                              NULL
            OPTIONAL,
    mbms-L23Configuration
                                         MBMS-L23Configuration
}
MBMS-NeighbouringCellSCCPCHList-r6 ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                          MBMS-NeighbouringCellSCCPCH-r6
-- IE "MBMS-NeighbouringCellSCCPCHList-v770ext" may be received as an extension of the IE
-- "MBMS-NeighbouringCellSCCPCHList-r6". When both lists are received in the same message
-- and the total number of list elements is greater than constant value 'maxSCCPCH', the
-- UE behaviour is unspecified.
MBMS-NeighbouringCellSCCPCHList-v770ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                          MBMS-NeighbouringCellSCCPCH-v770ext
MBMS-NI-CountPerFrame ::=
                                      ENUMERATED { ni18, ni36, ni72, ni144 }
MBMS-NumberOfNeighbourCells-r6 ::=
                                          INTEGER (0..32)
MBMS-PFLIndex ::=
                                      INTEGER (1..maxMBMS-Freq)
MBMS-PFLInfo ::=
                                      FrequencyInfo
MBMS-PhyChInformation-r6 ::=
                                      SEQUENCE {
    mbms-CommonPhyChIdentity
                                          MBMS-CommonPhyChIdentity,
    secondaryCCPCHInfo-MBMS
                                          SecondaryCCPCHInfo-MBMS-r6
}
MBMS-PhyChInformation-r7 ::=
                                      SEQUENCE {
    mbms-CommonPhyChIdentity
                                          MBMS-CommonPhyChIdentity,
    secondaryCCPCHInfo-MBMS
                                          SecondaryCCPCHInfo-MBMS-r7
MBMS-PhyChInformationList-r6 ::=
                                      SEQUENCE (SIZE (1..maxMBMS-CommonPhyCh)) OF
                                          MBMS-PhyChInformation-r6
MBMS-PhyChInformationList-r7 ::=
                                      SEQUENCE (SIZE (1..maxMBMS-CommonPhyCh)) OF
                                          MBMS-PhyChInformation-r7
MBMS-PL-ServiceRestrictInfo-r6 ::= ENUMERATED { true }
MBMS-PreferredFrequencyInfo-r6 ::= SEQUENCE {
                                          INTEGER (1..maxMBMS-Freq)
    mbmsPreferredFrequency
                                                                              OPTIONAL,
    layerConvergenceInformation
                                          CHOICE {
```

```
mbms-Qoffset
                                                                                   MBMS-Qoffset,
              mbms-HCSoffset
                                                                                   INTEGER (0..7)
                                                                        MBMS-PL-ServiceRestrictInfo-r6
       mbms-PL-ServiceRestrictInfo
                                                                                                                                              OPTIONAL
MBMS-PreferredFrequencyList-r6 ::= SEQUENCE (SIZE (1..maxMBMS-Freq)) OF
                                                                           MBMS-PreferredFrequencyInfo-r6
MBMS-PTMActivationTime-r6 ::=
                                                                    INTEGER (0..2047)
MBMS-PTM-RBInformation-C ::=
                                                                    SEOUENCE {
       rbInformation
                                                                          MBMS-CommonRBIdentity,
       shortTransmissionID
                                                                            MBMS-ShortTransmissionID,
       logicalChIdentity
                                                                           MBMS-LogicalChIdentity
}
                                                                SEQUENCE (SIZE (1..maxRBperTrCh)) OF
MBMS-PTM-RBInformation-CList ::=
                                                                           MBMS-PTM-RBInformation-C
MBMS-PTM-RBInformation-N ::=
                                                                   SEQUENCE {
       shortTransmissionID
                                                                          MBMS-ShortTransmissionID,
        logicalChIdentity
                                                                            MBMS-LogicalChIdentity,
       layer1-CombiningStatus
                                                                           BOOLEAN }
                                                                SEQUENCE (SIZE (1..maxRBperTrCh)) OF
MBMS-PTM-RBInformation-NList ::=
                                                                           MBMS-PTM-RBInformation-N
MBMS-PTM-RBReleaseCause-LCR-r7 ::= ENUMERATED {
                                                                            normalRelease, outOfMBMSServiceCoverageInRAN,
                                                                            networkAbnormalRelease,
                                                                            spare5, spare4, spare3, spare2, spare1 }
                                                                    ENUMERATED { q4, q8, q12, q16, q20, q30, q40, qInfinity }
MBMS-Ooffset ::=
                                                                    ENUMERATED {
MBMS-RequiredUEAction-Mod ::=
                                                                           none,
                                                                            acquireCountingInfo,
                                                                            acquireCountingInfoPTM-RBsUnmodified,
                                                                            acquirePTM-RBInfo,
                                                                            requestPTPRB,
                                                                           releasePTM-RB }
MBMS-RequiredUEAction-UMod ::=
                                                                    ENUMERATED {
                                                                           none,
                                                                            acquirePTM-RBInfo,
                                                                            requestPTPRB }
MBMS-SCCPCHIdentity ::=
                                                                    INTEGER (1..maxSCCPCH)
MBMS-SCCPCHPwrOffsetDiff ::=
                                                                    ENUMERATED { mcpo-minus6, mcpo-minus3, mcpo-plus3, mcpo-plus6 }
MBMS-SelectedServiceInfo ::=
                                                                    SEQUENCE {
       status
                                                                            CHOICE {
                                                                                  NULL,
              none
                                                                                   MBMS-SelectedServicesListFull
               some
}
MBMS-SelectedServicesListFull ::=
                                                                    SEQUENCE (SIZE (1..maxMBMSservSelect)) OF
                                                                           MBMS-ServiceIdentity-r6
MBMS-SelectedServicesListShort ::= SEQUENCE (SIZE (1..maxMBMSservSelect)) OF
                                                                           MBMS-ShortTransmissionID
MBMS-SelectedServicesShort ::=
                                                                    SEQUENCE {
                                                                          MBMS-SelectedServicesListShort,
       mbms-SelectedServicesList
       modificationPeriodIdentity
                                                                           INTEGER (0..1)
}
MBMS-ServiceAccessInfo-r6 ::= SEQUENCE {
       MBMS-AccessProbability accessprobability accessor accessprobability accessor accessprobability accessor accesso
                                                                           MBMS-AccessProbabilityFactor,
       {\tt access probability Factor-Connected} \qquad {\tt MBMS-Access Probability Factor}
                                                                                                                                              OPTIONAL,
       mbms-ConnectedModeCountingScope MBMS-ConnectedModeCountingScope
MBMS-ServiceAccessInfoList-r6 ::= SEQUENCE (SIZE (1..maxMBMSservCount)) OF
```

MBMS-ServiceAccessInfo-r6

```
MBMS-ServiceIdentity-r6 ::= SEQUENCE {
    serviceIdentity OCTET STRING (SIZE (3)),
    plmn-Identity CHOICE {
               plmn-Identity
                                                                                                                                                   CHOICE {
                            -- The 'sameAsMIB-PLMN-Id' choice refers to the 'PLMN Identity' (R99) in MIB.
                              sameAsMIB-PLMN-Id
                                                                                                                                                                  NULL.
                                                                                                                                                                   CHOICE {
                              other
                                            -- The 'sameAsMIB-MultiPLMN-Id' choice refers to one of the (1..5) PLMN Identities
                                             -- provided in the 'Multiple PLMN List' (REL-6) in MIB.
                                             sameAsMIB-MultiPLMN-Id
                                                                                                                                                                                INTEGER (1..5),
                                             explicitPLMN-Id
                                                                                                                                                                                   PLMN-Identity
                              }
               }
}
{\tt MBMS-ServiceSchedulingInfo-r6} \ ::= \ \ {\tt SEQUENCE} \ \big\{
              mbms-TransmissionIdentity
mbms-ServiceTransmInfoList
mbms-ServiceTransmInfo
              nextSchedulingperiod
                                                                                                                                                   INTEGER (0..31)
}
 MBMS-ServiceSchedulingInfoList-r6 ::= SEQUENCE (SIZE (1..maxMBMSservSched)) OF
                                                                                                                                                     MBMS-ServiceSchedulingInfo-r6
MBMS-ServiceTransmInfo ::=
                                                                                                                                    SEQUENCE {
               -- Actual values (start, duration) = IE values * 4
                                                                                                                                                     INTEGER (0..255),
                                                                                                                                                   INTEGER (1..256)
              duration
}
MBMS-ServiceTransmInfoList ::=
                                                                                                                                 SEQUENCE (SIZE (1..maxMBMSTransmis)) OF
                                                                                                                                                   MBMS-ServiceTransmInfo
MBMS-SessionIdentity ::=
                                                                                                                                  OCTET STRING (SIZE (1))
MBMS-ShortTransmissionID ::=
                                                                                                                                  INTEGER (1..maxMBMSservUnmodif)
MBMS-SIBType5-SCCPCH-r6 ::= SEQUENCE {
                                                                                                                                       MBMS-SCCPCHIdentity,
            sccpchIdentity
               transpCHInformation
                                                                                                                                                     MBMS-TrCHInformation-SIB5List
}
                                                                                                                                       SEQUENCE (SIZE (1..maxSCCPCH)) OF
MBMS-SIBType5-SCCPCHList-r6 ::=
                                                                                                                                                    MBMS-SIBType5-SCCPCH-r6
MBMS-SoftComb-TimingOffset ::=
                                                                                                                                       ENUMERATED { ms0, ms10, ms20, ms40 }
MBMS-TCTF-Presence ::=
                                                                                                                                       ENUMERATED { false }
                                                                                                                                       SEQUENCE {
MBMS-TimersAndCounters-r6 ::=
                                                                                                                                                                                                                                                                                           DEFAULT ms1000
             t-318
                                                                                                                                                    T-318
\begin{array}{lll} \texttt{MBMS-TransmissionIdentity} & ::= & \texttt{SEQUENCE} \ \{ \\ \texttt{mbms-ServiceIdentity} & \texttt{MBMS-ServiceIdentity} \end{array}
                                                                                                                                     MBMS-ServiceIdentity-r6,
                                                                                                                                                                                                                                                                                      OPTIONAL
              mbms-SessionIdentity
                                                                                                                                                   MBMS-SessionIdentity
 }
\verb|MBMS-TranspChInfoForCCTrCh-r6|::= SEQUENCE| \{
               TFCS

THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMONICATION TO THE TOTAL COMMO
              commonCCTrChIdentity
 }
\verb|MBMS-TranspChInfoForEachCCTrCh-r6|::= SEQUENCE (SIZE (1..maxMBMS-CommonCCTrCh))| OF | SEQUENCE (SIZE (1..maxMBMS-CommonCCTrCh)| | SEQUENCE (SIZE (1..maxMBMS-CommonCTTCh)| | SEQUENCE (SIZE (1..maxMBMS-CommonCTTCh)| | SEQUENCE (SIZE (1..maxMBMS-CommonCTTCh)| | SEQUENCE (SIZE (1..maxMBMS-COMMONCCTCH)| | SEQUENCE (SIZE (1..maxMBMS-COMMONCCTCH)| | SEQUENCE (SIZE (1..maxMBM
                                                                                                                                                     MBMS-TranspChInfoForCCTrCh-r6
MBMS-TranspChInfoForTrCh-r6
{\tt MBMS-TranspChInfoForTrCh-r6} \ ::= \ \ {\tt SEQUENCE} \ \{
                                                                                                                                            MBMS-CommonTrChIdentity,
            commonTrChIdentity
               transportFormatSet
                                                                                                                                                   TransportFormatSet
 }
 {\tt MBMS-TrCHInformation-Curr} \ ::= \ \ {\tt SEQUENCE} \ \big\{
                                                                                                                                                   MBMS-CommonTrChIdentity,
               transpCh-Info
```

```
rbInformation
                                                                       MBMS-PTM-RBInformation-CList
                                                                                                                                        OPTIONAL,
       msch-ConfigurationInfo
                                                                       MBMS-MSCH-ConfigurationInfo-r6
                                                                                                                                         OPTIONAL
}
MBMS-TrcHInformation-CurrList ::= SEQUENCE (SIZE (1..maxFACHPCH)) OF
                                                                       MBMS-TrCHInformation-Curr
{\tt MBMS-TrCHInformation-Neighb} ::= \\ {\tt SEQUENCE} \ \{
       transpCh-Info
                                                                    MBMS-CommonTrChIdentity,
       transpCh-CombiningStatus
                                                                         BOOLEAN,
       rbInformation
                                                                       MBMS-PTM-RBInformation-NList
                                                                                                                                       OPTIONAL.
                                                                       MBMS-MSCH-ConfigurationInfo-r6
       msch-ConfigurationInfo
                                                                                                                                        OPTIONAL
}
MBMS-TrCHInformation-NeighbList ::= SEQUENCE (SIZE (1..maxFACHPCH)) OF
                                                                       MBMS-TrCHInformation-Neighb
transpCh-Identity
                                                                       INTEGER (1..maxFACHPCH),
                                                                         MBMS-PTM-RBInformation-CList
                                                                                                                                         OPTIONAL,
       rbInformation
                                                                        MBMS-MSCH-ConfigurationInfo-r6
       msch-ConfigurationInfo
                                                                                                                                          OPTIONAL
}
MBMS-TrCHInformation-SIB5List ::= SEQUENCE (SIZE (1..maxFACHPCH)) OF
                                                                       MBMS-TrCHInformation-SIB5
MBMS-UnmodifiedService-r6 ::= SEQUENCE {
   mbms-TransmissionIdentity MBMS-T
                                                              MBMS-TransmissionIdentity,
MBMS-RequiredUEAction-UMod,
       mbms-RequiredUEAction
                                                                     MBMS-PFLIndex
                                                                                                                                         OPTIONAL
       mbms-PreferredFrequency
}
MBMS-UnmodifiedServiceList-r6 ::= SEQUENCE (SIZE (1..maxMBMSservUnmodif)) OF
                                                                        MBMS-UnmodifiedService-r6
MBMS-UnmodifiedService-v770ext ::= SEQUENCE {
     mbsfnClusterFrequency
                                                                     MBSFN-ClusterFrequency-r7
                                                                                                                                       OPTIONAL
-- IE 'MBMS-UnmodifiedServiceList-v770ext' contains a list of extension data
-- associated with the MBMS transmission identities at the corresponding
 -- positions in IE 'MBMS-UnmodifiedServiceList-r6'
\verb|MBMS-UnmodifiedServiceList-v770ext|::= SEQUENCE (SIZE (1..maxMBMSservUnmodif)) OF | SIZE (1..maxMBMSservUnmodif)| OF 
                                                                       MBMS-UnmodifiedService-v770ext
MBSFN-ClusterFrequency-r7 ::=
                                                              INTEGER (1..maxMBSFNClusters)
MBSFNFrequency ::=
                                                                 SEQUENCE {
                                                                       FrequencyInfo,
       frequencyInfo
       -- IE "cellParameterID" is used only for MBSFN clusters operating in 1.28 Mcps TDD mode.
       cellParametersID
                                                                        CellParametersID
MBSFNFrequencyList ::=
                                                               SEQUENCE (SIZE (0..maxMBSFNClusters)) OF
                                                                        MBSFNFrequency
MBSFNOnlyService ::=
                                                                 ENUMERATED {true}
MBSFNservicesNotNotified-r7 ::= SEQUENCE {
       {\tt notificationOfAllMBSFNServicesInTheBand}
                                                                        ENUMERATED { true }
                                                                                                                                       OPTIONAL
MBSFNInterFrequencyNeighbour-r7 ::= SEQUENCE {
       mbsinFrequency FrequencyInfo,
mbsfnServicesNotification CHOICE {
  mbsfnServicesNotified NULL,
  mbsfnServicesNotNotified MBSFNservi
}
                                                                              MBSFNservicesNotNotified-r7
}
MBSFN-InterFrequencyNeighbourList-r7 ::= SEQUENCE (SIZE (1.. maxMBSFNClusters)) OF
                                                                       MBSFNInterFrequencyNeighbour-r7
MBSFN-TDDTimeSlotInfo ::= SEQUENCE {
       timeSlotNumber
                                                                       TimeslotNumber-LCR-r4,
       cellParametersID
                                                                       CellParametersID
```

```
MBSFN-TDDTimeSlotInfo-LCR ::= SEQUENCE {
  frequencyIndex
                               INTEGER (1..maxMBSFNClusters),
   timeSlotList
                               MBSFN-TDDInformation
MBSFN-TDDInformation ::= SEQUENCE (SIZE (1..maxTS)) OF
                               MBSFN-TDDTimeSlotInfo
MBSFN-TDDTimeSlotInfo-LCR
MBSFN-TDM-Info ::=
                           SEQUENCE {
   shortTransmissionID
                              MBMS-ShortTransmissionID,
   tDMPeriod
                                INTEGER (2..9),
   tDMOffset
                                INTEGER (0..8),
                               INTEGER (1..8)
   tDMLength
}
MBSFN-TDM-Info-List ::= SEQUENCE (SIZE (1..maxMBMSservUnmodif)) OF
                               MBSFN-TDM-Info
END
```

## 11.4 Constant definitions

Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=

```
BEGIN
```

```
hiPDSCHidentities
                                            INTEGER ::= 64
 hiPUSCHidentities
                                              INTEGER ::= 64
                                            INTEGER .. 256
 hiRM
                                              INTEGER ::= 16
 maxAC
 maxAdditionalMeas
                                               INTEGER ::= 4
                                            INTEGER ::= 8
 maxASC
                                       INTEGER ::= 6
 maxASCmap
 maxASCmap
maxASCpersist
 maxCCTrCH
                                            INTEGER ::= 8
                                    INTEGER ::= 8
INTEGER ::= 32
INTEGER ::= 31
INTEGER ::= 4
INTEGER ::= 2
INTEGER ::= 16
INTEGER ::= 8
INTEGER ::= 6
INTEGER ::= 8
INTEGER ::= 8
INTEGER ::= 8
 maxCellMeas
 maxCellMeas-1
 maxCNdomains
 maxCommonHRNTI
 maxCommonQueueID
 maxCPCHsets
 maxDPCH-DLchan
 maxDPDCH-III
 maxDRACclasses
maxE-DCHMACdFlow
INTEGER ::= 8
maxE-DCHMACdFlow-1
INTEGER ::= 7
INTEGER ::= 4
 maxFACHPCH
                                             INTEGER ::= 8
 INTEGER ::= 8
INTEGER ::= 7
 maxGANSS
 maxGANSS-1
                                           INTEGER ::= 64
INTEGER ::= 63
 maxGANSSSat
 maxGANSSSat-1
 maxGANSSSat-1INTEGER:- 8maxGERAN-SIINTEGER:: 8maxGSMTargetCellsINTEGER:: 32maxHProcessesINTEGER:: 8
 maxHProcessesINTEGER ::= 0maxHS-SCCHLessTrBlkINTEGER ::= 4maxHSDSCHTBIndexINTEGER ::= 64maxHSDSCHTBIndex-tdd384INTEGER ::= 512
maxHsscchs
maxIntersysMessages
maxLochperRLC
maxMAC-d-PDUsizes
maxMBMS-CommonPhych
maxMBMS-CommonPhych
maxMBMS-CommonTrch
maxMBMS-CommonTrch
maxMBMS-Freq
maxMBMS-L1CP

INTEGER
::= 4
INTEGER
::= 32
INTEGER
::= 4
INTEGER
::= 4
```

```
maxMBMSservCount
                                                                                                                    INTEGER ::= 8
                                                                                                                         INTEGER ::= 32
   maxMBMSservModif
   maxMBMSservSched
                                                                                                                    INTEGER ::= 16
                                                                                                                 INTEGER ::= 8
INTEGER ::= 64
INTEGER ::= 4
   maxMBMSservSelect
   maxMBMSservSelect
maxMBMSservUnmodif
maxMBMSTransmis
maxMBSFNClusters

        maxMBSFNClusters
        INTEGER ::= 16

        maxMeasEvent
        INTEGER ::= 3

        maxMeasIntervals
        INTEGER ::= 3

        maxMeasParEvent
        INTEGER ::= 2

        maxNumCDMA2000Freqs
        INTEGER ::= 8

        maxNumE-AGCH
        INTEGER ::= 4

        maxNumE-HICH
        INTEGER ::= 32

        maxNumGSMFreqRanges
        INTEGER ::= 32

        maxNumFDDFreqs
        INTEGER ::= 8

        maxNumTDDFreqs
        INTEGER ::= 16

        maxNoOfMeas
        INTEGER ::= 15

        maxOtherRAT
        INTEGER ::= 16

        maxPCPCH-APsig
        INTEGER ::= 16

        maxPCPCH-APsig
        INTEGER ::= 16

        maxPCPCH-CDsid
        INTEGER ::= 12

        maxPCPCH-CDsubCh
        INTEGER ::= 12

        maxPCPCH-SF
        INTEGER ::= 12

        maxPCPCHSG
        INTEGER ::= 64

        maxPDSCH
        INTEGER ::= 8

        maxPDSCH-TFCIgroups
        INTEGER ::= 8

        maxPRACH-FPACH
        INTEGER ::= 16

        maxPRACH-FPACH
        INTEGER ::= 8

        maxPredefConfig
        INTEGER ::= 8

        maxPusCH
        INTEGER ::= 16

        maxPABsetup
        INTEGER ::= 16

   maxMBSFNClusters
                                                                                                                INTEGER ::= 16
INTEGER ::= 8
   maxMeasEvent
                                                                                                                 INTEGER ::= 8

INTEGER ::= 16

INTEGER ::= 16

INTEGER ::= 32

        maxRAT
        INTEGER
        ::=
        16

        maxRB
        INTEGER
        ::=
        32

        maxRBallRABS
        INTEGER
        ::=
        27

        maxRBMuxOptions
        INTEGER
        ::=
        8

        maxRBperRAB
        INTEGER
        ::=
        8

        maxRBperTrCh
        INTEGER
        ::=
        16

        maxReportedGSMCells
        INTEGER
        ::=
        8

        maxRL
        INTEGER
        ::=
        8

        maxRL
        INTEGER
        ::=
        32

        maxRLCPDUsizePerLogChan
        INTEGER
        ::=
        32

        maxROHC-PacketSizes-r4
        INTEGER
        ::=
        16

        maxROHC-Profile-r4
        INTEGER
        ::=
        16

        maxSat
        INTEGER
        ::=
        16

        maxSatClockModels
        INTEGER
        ::=
        16

        maxSgnType
        INTEGER
        ::=
        8

        maxSIB
        INTEGER
        ::=
        8

                                                                                                                 INTEGER ::= 32
INTEGER ::= 8
INTEGER ::= 16
   maxSIB
  maxSIB
maxSIB-FACH
maxSIBperMsg
  maxSRBsetup INTEGER ::= 16
maxSystemCapability INTEGER ::= 16
maxTDD128Carrier INTEGER ::= 6
                                                                                                                    INTEGER ::= 32
INTEGER ::= 16
   maxTF
   maxTF-CPCH
   maxTF-CPCH
maxTFC
maxTFCsub
maxTFCI-2-Combs
                                                                                                                    INTEGER ::= 1024
INTEGER ::= 1024
                                                                                                                  INTEGER ::= 512
                                                                                                                     INTEGER ::= 6
INTEGER ::= 32
   maxTGPS
   maxTrCH
     -- maxTrCHpreconf should be 16 but has been set to 32 for compatibility
   maxTrCHpreconf INTEGER ::= 32
                                                                                                                      INTEGER ::= 14
   maxTS
                                                                                                                     INTEGER ::= 13
INTEGER ::= 12
   maxTS-1
   maxTS-2
   maxTS-LCR
                                                                                                                    INTEGER ::= 6
   maxTS-LCR-1
                                                                                                                        INTEGER ::= 5
                                                                                                                      INTEGER ::= 8
   maxURA
   maxURNTI-Group
                                                                                                                    INTEGER ::= 8
   END
```

## 11.5 RRC information between network nodes

Internode-definitions DEFINITIONS AUTOMATIC TAGS ::= BEGIN IMPORTS HandoverToUTRANCommand, MeasurementReport, PhysicalChannelReconfiguration, RadioBearerReconfiguration, RadioBearerRelease, RadioBearerSetup, RRCConnectionSetupComplete-r3-add-ext-IEs, RRC-FailureInfo, TransportChannelReconfiguration, UECapabilityInformation-r3-add-ext-IEs FROM PDU-definitions -- Core Network IEs : CN-DomainIdentity, CN-DomainInformationList, CN-DomainInformationListFull, CN-DRX-CycleLengthCoefficient, NAS-SystemInformationGSM-MAP, -- UTRAN Mobility IEs : CellIdentity, URA-Identity, -- User Equipment IEs : AccessStratumReleaseIndicator, C-RNTI, ChipRateCapability, DL-CapabilityWithSimultaneousHS-DSCHConfig, DL-PhysChCapabilityFDD-v380ext, DL-PhysChCapabilityTDD, DL-PhysChCapabilityTDD-LCR-r4, GSM-Measurements, HSDSCH-physical-layer-category, FailureCauseWithProtErr, MaxHcContextSpace, MaximumAM-EntityNumberRLC-Cap, MaximumRLC-WindowSize, MaxNoPhysChBitsReceived, MaxNoDPDCH-BitsTransmitted, MaxPhysChPerFrame, MaxPhysChPerSubFrame-r4, MaxPhysChPerTS, MaxROHC-ContextSessions-r4, MaxTS-PerFrame, MaxTS-PerSubFrame-r4, MinimumSF-DL, MultiModeCapability, MultiRAT-Capability, NetworkAssistedGPS-Supported, PhysicalChannelCapability-edch-r6, RadioFrequencyBandTDDList, RLC-Capability, RRC-MessageSequenceNumber, SecurityCapability, SimultaneousSCCPCH-DPCH-Reception, STARTList, STARTSingle, START-Value, SupportOfDedicatedPilotsForChEstimation, TransportChannelCapability, TxRxFrequencySeparation, U-RNTI, UE-CapabilityContainer-IEs, UE-GANSSPositioning-Capability, UE-MultiModeRAT-Capability, UE-PowerClassExt, UE-RadioAccessCapabBandFDDList, UE-RadioAccessCapabBandFDDList2, UE-RadioAccessCapabBandFDDList-ext, UE-RadioAccessCapability,

```
UE-RadioAccessCapability-v370ext,
   UE-RadioAccessCapability-v380ext,
   UE-RadioAccessCapability-v3a0ext,
   UE-RadioAccessCapability-v3g0ext,
   UE-RadioAccessCapability-v4b0ext,
   UE-RadioAccessCapability-v590ext,
   UE-RadioAccessCapability-v5c0ext,
   UE-RadioAccessCapability-v7e0ext,
   UE-RadioAccessCapability-v7f0ext,
   UL-PhysChCapabilityFDD,
   UL-PhysChCapabilityFDD-r6
   UL-PhysChCapabilityTDD,
   UL-PhysChCapabilityTDD-LCR-r4,
-- Radio Bearer IEs :
   PredefinedConfigStatusList,
   PredefinedConfigValueTag,
   RAB-InformationSetupList,
   RAB-InformationSetupList-r4,
   RAB-InformationSetupList-r5,
   RAB-InformationSetupList-r6-ext,
   RAB-InformationSetupList-r6,
   RAB-InformationSetupList-v6b0ext,
   RAB-InformationSetupList-r7,
   RB-Identity,
   SRB-InformationSetupList,
   SRB-InformationSetupList-r5,
   SRB-InformationSetupList-r6,
   SRB-InformationSetupList-r7,
-- Transport Channel IEs :
   CPCH-SetID,
   DL-CommonTransChInfo,
   DL-CommonTransChInfo-r4,
   DL-AddReconfTransChInfoList,
   DL-AddReconfTransChInfoList-r4,
   DL-AddReconfTransChInfoList-r5,
   DL-AddReconfTransChInfoList-r7,
   DRAC-StaticInformationList,
   UL-CommonTransChInfo,
   UL-CommonTransChInfo-r4
   UL-AddReconfTransChInfoList,
   UL-AddReconfTransChInfoList-r6,
   UL-AddReconfTransChInfoList-r7,
-- Physical Channel IEs :
   PrimaryCPICH-Info,
   TPC-CombinationIndex,
   ScramblingCodeChange,
   TGCFN.
   TGPSI,
   TGPS-ConfigurationParams,
-- Measurement IEs :
   Event1i-r6.
   Hysteresis,
   Inter-FreqEventCriteriaList-v590ext,
   Intra-FreqEventCriteriaList-v590ext,
   IntraFreqEvent-1d-r5,
   {\tt IntraFreqReportingCriteria-1b-r5,}
   InterRATCellInfoIndication,
   MeasuredResultsOnRACHinterFreq,
   MeasurementIdentity,
   MeasurementReportingMode,
   MeasurementType,
   MeasurementType-r4,
   MeasurementType-r6,
   MeasurementType-r7,
   AdditionalMeasurementID-List,
   PositionEstimate,
   ReportingCellStatus,
   ThresholdSFN-GPS-TOW-us,
   TimeToTrigger,
-- MBMS IEs :
   MBMS-JoinedInformation-r6,
   MBMS-SelectedServiceInfo,
-- Other IEs :
   GERANIu-RadioAccessCapability,
   GSM-MS-RadioAccessCapability,
   InterRAT-UE-RadioAccessCapabilityList,
   InterRAT-UE-RadioAccessCapability-v590ext,
   InterRAT-UE-RadioAccessCapability-v690ext,
```

UESpecificBehaviourInformation1idle,

```
UESpecificBehaviourInformation1interRAT
FROM InformationElements
   maxCNdomains,
   maxGANSS,
   maxNoOfMeas,
   maxRB,
   maxRBallRABs,
   maxRFC3095-CID,
   maxSRBsetup,
   maxRI.
   maxTGPS
FROM Constant-definitions;
-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is tranferred in the same direction and across the same path is grouped
__ ***************
-- RRC information, to target RNC
__ ****************
-- RRC Information to target RNC sent either from source RNC or from another RAT
ToTargetRNC-Container ::= CHOICE {
                                    InterRATHandoverInfoWithInterRATCapabilities-r3,
   interRATHandoverInfo
   srncRelocation
                                   SRNC-RelocationInfo-r3,
                                    RFC3095-ContextInfo-r5,
   rfc3095-ContextInfo
   extension
                                    NULL
}
__ *******************
-- RRC information, target RNC to source RNC
__ ***************
TargetRNC-ToSourceRNC-Container ::= CHOICE {
                             RadioBearerSetup,
   radioBearerSetup
   radioBearerReconfiguration
                                   RadioBearerReconfiguration,
   {\tt radioBearerRelease}
                                    RadioBearerRelease,
   transportChannelReconfiguration physicalChannelReconfiguration physicalChannelReconfiguration physicalChannelReconfiguration,
   rrc-FailureInfo
                                   RRC-FailureInfo,
   -- IE dl-DCCHmessage consists of an octet string that includes the IE DL-DCCH-Message
   dL-DCCHmessage
                                    OCTET STRING,
   extension
}
-- Part 2: Container definitions, similar to the PDU definitions in 11.2 for RRC messages
-- In alphabetical order
__ ***************
-- Handover to UTRAN information
__ *************************
InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {
                                SEQUENCE {
       -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
       -- includes non critical extensions
       inter {\tt RATH} and over {\tt InfoWithInterRATC} a pabilities - {\tt v390ext}
                                    InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
           -- Reserved for future non critical extension
           v690NonCriticalExtensions
                                       SEQUENCE {
              interRATHandoverInfoWithInterRATCapabilities-v690ext
                                   InterRATHandoverInfoWithInterRATCapabilities-v690ext-IEs,
              nonCriticalExtensions
                                           SEQUENCE {} OPTIONAL
                OPTIONAL
              OPTIONAL
   },
```

```
criticalExtensions
                                                  SEQUENCE {}
}
InterRATHandoverInfoWithInterRATCapabilities-r3-IEs ::=
                                                                                      SEQUENCE {
           -- The order of the IEs may not reflect the tabular format
            -- but has been chosen to simplify the handling of the information in the BSC
      -- Other IEs
           ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
-- interRATHandoverInfo, Octet string is used to obtain 8 bit length field prior to
           -- actual information. This makes it possible for BSS to transparently handle information -- received via GSM air interface even when it includes non critical extensions.
            -- The octet string shall include the InterRATHandoverInfo information
            -- The BSS can re-use the 44.018 length field received from the \ensuremath{\mathsf{MS}}
           interRATHandoverInfo
                                                         OCTET STRING (SIZE (0..255))
}
InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs ::= SEQUENCE {
     -- User equipment IEs
          failureCauseWithProtErr
                                                               FailureCauseWithProtErr
}
InterRATHandoverInfoWithInterRATCapabilities-v690ext-IEs ::= SEQUENCE {
    -- Other IEs
          ue-RATSpecificCapability-v690ext InterRAT-UE-RadioAccessCapability-v690ext OPTIONAL
}
__ *************************
-- RFC3095 context, source RNC to target RNC
__ ***************
RFC3095-ContextInfo-r5 ::= CHOICE {
                                                    SEQUENCE {
           rFC3095-ContextInfoList-r5
                                                       RFC3095-ContextInfoList-r5,
            -- Reserved for future non critical extension
           nonCriticalExtensions
                                                        SEQUENCE { } OPTIONAL
                                            SEQUENCE {}
     criticalExtensions
}
RFC3095-ContextInfoList-r5 ::= SEOUENCE (SIZE (1..maxRBallRABs)) OF
                                                         RFC3095-ContextInfo
__ ***************
-- SRNC Relocation information
__ ******************************
SRNC-RelocationInfo-r3 ::= CHOICE {
           SEQUENCE {
SRNC-RelocationInfo-r3
V380NonCritical
           sRNC-RelocationInfo-r3 SRNC-RelocationInfo-r3-IEs, v380NonCriticalExtensions SEQUENCE {
                 sRNC-RelocationInfo-v380ext SRNC-RelocationInfo-v380ext-IEs,
                  -- Reserved for future non critical extension
                                                               SEQUENCE {
                 v390NonCriticalExtensions
                       SRNC-RelocationInfo-v390ext SRNC-RelocationInfo-v390ext-IEs,
v3a0NonCriticalExtensions SEQUENCE {
    SRNC-RelocationInfo-v3a0ext SRNC-RelocationInfo-v3a0ext-IEs,
    v3b0NonCriticalExtensions SEQUENCE {
                                   SRNC-RelocationInfo-v3b0ext SRNC-RelocationInfo-v3b0ext-IEs, v3c0NonCriticalExtensions SEQUENCE {
                                        SKNC-RelocationInfo-v3b0ext-IEs,
SEQUENCE {
SRNC-RelocationInfo-v3c0ext
laterNonCriticalExtensions
SRNC-RelocationInfo-v3c0ext
                                                                                                  SRNC-RelocationInfo-v3d0ext-IEs,
                                              sRNC-RelocationInfo-r3-add-ext BIT STRING
                                                                      (CONTAINING SRNC-RelocationInfo-v3h0ext-IEs) OPTIONAL,
                                              v3g0NonCriticalExtensions SEQUENCE {
    sRNC-RelocationInfo-v3g0ext SRNC-RelocationInfo-v3g0ext-IEs,
    v4b0NonCriticalExtensions SEQUENCE {

                                                                                                             SRNC-RelocationInfo-v4b0ext-IEs,
                                                          sRNC-RelocationInfo-v4b0ext
                                                          v590NonCriticalExtensions
                                                                                                              SEQUENCE {
                                                                sRNC-RelocationInfo-v590ext
                                                                                                            SRNC-RelocationInfo-v590ext-IEs,
                                                                v5a0NonCriticalExtensions
                                                                                                                   SEQUENCE {
```

```
sRNC-RelocationInfo-v5a0ext
                                                                        SRNC-RelocationInfo-v5a0ext-IEs,
                                            v5b0NonCriticalExtensions
                                                                                SEQUENCE {
                                                sRNC-RelocationInfo-v5b0ext
                                                                        SRNC-RelocationInfo-v5b0ext-IEs,
                                                v5c0NonCriticalExtensions
                                                                                    SEOUENCE {
                                                    sRNC-RelocationInfo-v5c0ext
                                                                        SRNC-RelocationInfo-v5c0ext-IEs,
                                                    v690NonCriticalExtensions
                                                                                    SEQUENCE {
                                                        sRNC-RelocationInfo-v690ext
                                                                        SRNC-RelocationInfo-v690ext-IEs,
                                                                                        SEQUENCE {
                                                        v6b0NonCriticalExtensions
                                                            sRNC-RelocationInfo-v6b0ext
                                                                        SRNC-RelocationInfo-v6b0ext-IEs,
                                                            v770NonCriticalExtensions SEQUENCE {
                                                                sRNC-RelocationInfo-v770ext
                                                                        SRNC-RelocationInfo-v770ext-IEs.
                                                                 v7e0NonCriticalExtensions SEQUENCE {
                                                                     sRNC-RelocationInfo-v7e0ext
                                                                        SRNC-RelocationInfo-v7e0ext-IEs,
                                                                     v7f0NonCriticalExtensions SEQUENCE {
                                                                         sRNC-RelocationInfo-v7f0ext
                                                                         SRNC-RelocationInfo-v7f0ext-IEs,
                                                                         nonCriticalExtensions
                                                                                     SEQUENCE {} OPTIONAL
                                                                            OPTIONAL
                                                                        OPTIONAL
                                                                     OPTIONAL
                                                                OPTIONAL
                                                            OPTIONAL.
                                                        OPTIONAL
                                                    OPTIONAL
                                                OPTIONAL
                                            OPTIONAL
                                        OPTIONAL
                                    OPTIONAL
                                OPTIONAL
                            OPTIONAL
                        OPTIONAL
                    OPTIONAL
                OPTIONAL
    }
            OPTIONAL
later-than-r3
                                CHOICE {
   r4
                                    SEQUENCE {
        sRNC-RelocationInfo-r4
                                        SRNC-RelocationInfo-r4-IEs,
                                        SEQUENCE {
        v4d0NonCriticalExtensions
            sRNC-RelocationInfo-v4d0ext
                                            SRNC-RelocationInfo-v4d0ext-IEs,
            -- Container for adding non critical extensions after freezing REL-5
            sRNC-RelocationInfo-r4-add-ext BIT STRING
                                                                OPTIONAL,
                                                SEQUENCE {
            v590NonCriticalExtensions
                sRNC-RelocationInfo-v590ext
                                                    SRNC-RelocationInfo-v590ext-IEs,
                v5a0NonCriticalExtensions
                                                    SEQUENCE {
                                                        SRNC-RelocationInfo-v5a0ext-IEs,
                    sRNC-RelocationInfo-v5a0ext
                                                        SEQUENCE {
                    v5b0NonCriticalExtensions
                        sRNC-RelocationInfo-v5b0ext
                                                            SRNC-RelocationInfo-v5b0ext-IEs,
                        v5c0NonCriticalExtensions
                                                            SEQUENCE {
                            sRNC-RelocationInfo-v5c0ext
                                                                SRNC-RelocationInfo-v5c0ext-IEs,
                            v690NonCriticalExtensions
                                                                SEQUENCE {
                                sRNC-RelocationInfo-v690ext
                                                                SRNC-RelocationInfo-v690ext-IEs.
                                                                    SEQUENCE {
                                v6b0NonCriticalExtensions
                                    sRNC-RelocationInfo-v6b0ext
                                                                SRNC-RelocationInfo-v6b0ext-IEs,
                                    v770NonCriticalExtensions
                                                                        SEQUENCE {
                                        sRNC-RelocationInfo-v770ext
                                                                SRNC-RelocationInfo-v770ext-IEs,
                                        v7e0NonCriticalExtensions
                                                                            SEQUENCE {
                                            sRNC-RelocationInfo-v7e0ext
                                                                SRNC-RelocationInfo-v7e0ext-IEs,
                                            v7f0NonCriticalExtensions
                                                                                SEQUENCE {
                                                sRNC-RelocationInfo-v7f0ext
                                                                SRNC-RelocationInfo-v7f0ext-IEs,
                                                                                SEQUENCE {} OPTIONAL
                                                nonCriticalExtensions
                                                OPTIONAL
                                            OPTIONAL
                                        OPTIONAL
                                    OPTIONAL
                                OPTIONAL
```

} OPTIONAL

```
OPTIONAL
                        OPTIONAL
                    OPTIONAL
                OPTIONAL
        },
        criticalExtensions
                                        CHOICE {
                                             SEQUENCE {
            r5
                sRNC-RelocationInfo-r5
                                              SRNC-RelocationInfo-r5-IEs,
                sRNC-RelocationInfo-r5-add-ext BIT STRING OPTIONAL,
v5a0NonCriticalExtensions SEQUENCE {
                    sRNC-RelocationInfo-v5a0ext SRNC-RelocationInfo-v5a0ext-IEs, v5b0NonCriticalExtensions SEQUENCE {
                        sRNC-RelocationInfo-v5b0ext SRNC-RelocationInfo-v5b0ext-IEs, v5c0NonCriticalExtensions SEQUENCE {
                                                           SRNC-RelocationInfo-v5c0ext-IEs,
                            sRNC-RelocationInfo-v5c0ext
                                                                  SEQUENCE {
                             v690NonCriticalExtensions
                                 sRNC-RelocationInfo-v690ext
                                                                     SRNC-RelocationInfo-v690ext-IEs,
                                 v6b0NonCriticalExtensions
                                                                     SEQUENCE {
                                                                    SRNC-RelocationInfo-v6b0ext-IEs,
                                     sRNC-RelocationInfo-v6b0ext
                                                                      SEQUENCE {
                                         v770NonCriticalExtensions
                                             sRNC-RelocationInfo-v770ext
                                                                     SRNC-RelocationInfo-v770ext-IEs,
                                             v7e0NonCriticalExtensions
                                                                                SEQUENCE {
                                                 sRNC-RelocationInfo-v7e0ext
                                                                     SRNC-RelocationInfo-v7e0ext-IEs,
                                                 v7f0NonCriticalExtensions
                                                                                     SEQUENCE {
                                                     sRNC-RelocationInfo-v7f0ext
                                                                     SRNC-RelocationInfo-v7f0ext-IEs,
                                                                                SEQUENCE {}
                                                                                                  OPTIONAL
                                                     nonCriticalExtensions
                                                 OPTIONAL
                                             OPTIONAL
                                         OPTIONAL
                                     OPTIONAL
                                OPTIONAL.
                            OPTIONAL
                        OPTIONAL
                    OPTIONAL
                }
            criticalExtensions
                                             CHOICE {
                                              SEQUENCE {
                    sRNC-RelocationInfo-r6 SRNC-RelocationInfo-r6-IEs, sRNC-RelocationInfo-r6-add-ext BIT STRING
                                     (CONTAINING SRNC-RelocationInfo-r6-add-ext-IEs) OPTIONAL,
                     v6b0NonCriticalExtensions SEQUENCE {
                        sRNC-RelocationInfo-v6b0ext SRNC-RelocationInfo-v6b0ext-IEs,
                                                         SEQUENCE {
                        v770NonCriticalExtensions
                             {\tt SRNC-RelocationInfo-v770ext} \qquad {\tt SRNC-RelocationInfo-v770ext-IEs},
                            nonCriticalExtensions
                                                             SEQUENCE { } OPTIONAL
                            OPTIONAL
                    }
                        OPTIONAL
                },
                criticalExtensions
                                                 CHOICE {
                                                  SEQUENCE {
                    r7
                                                      SRNC-RelocationInfo-r7-IEs,
                        sRNC-RelocationInfo-r7
                        sRNC-RelocationInfo-r7-add-ext BIT STRING
                                     (CONTAINING SRNC-RelocationInfo-r7-add-ext-IEs) OPTIONAL,
                        nonCriticalExtensions
                                                        SEQUENCE {} OPTIONAL
                    criticalExtensions
                                                    SECUENCE {}
                }
           }
       }
    }
}
                                    SEQUENCE {
SRNC-RelocationInfo-r3-IEs ::=
    -- Non-RRC IEs
                                         StateOfRRC.
        stateOfRRC
        stateOfRRC-Procedure
                                        StateOfRRC-Procedure,
    -- Ciphering related information IEs
    -- If the extension v380 is included use the extension for the ciphering status per CN domain
        cipheringStatus
                                    CipheringStatus,
        -- If ciphering status is started and the IE latestConfiguredCN-Domain should be included,
        -- the IE cn-DomainIdentity (in SRNC-RelocationInfo-v380ext-IEs) shall be used instead.
                                     CalculationTimeForCiphering
        calculationTimeForCiphering
        -- The order of occurrence in the IE cipheringInfoPerRB-List is the
        -- same as the RBs in SRB-InformationSetupList in RAB-InformationSetupList.
```

```
-- The signalling RBs are supposed to be listed
        -- first. Only UM and AM RBs that are ciphered are listed here
        cipheringInfoPerRB-List
count-C-List
integrityProtectionStatus

CipheringInfoPerRB-List
COUNT-C-List
IntegrityProtectionStatus,
                                                                               OPTIONAL,
                                                                               OPTIONAL,
        -- In the IE srb-SpecificIntegrityProtInfo, the first information listed corresponds to
      -- signalling radio bearer RBO and after the order of occurrence is the same as the SRBs in
     -- SRB-InformationSetupList
        -- The target RNC may ignore the IE \operatorname{srb-SpecificIntegrityProtInfo} if the
        -- IE integrityProtectionStatus has the value "not started".
        OPTIONAL.
    -- User equipment IEs
        u-RNTI
                                        U-RNTI,
        c-RNTI
                                         C-RNTI
                                                                               OPTIONAL,
        ue-RadioAccessCapability
                                         UE-RadioAccessCapability,
        ue-Positioning-LastKnownPos UE-Positioning-LastKnownPos
                                                                               OPTIONAL.
    -- Other TEs
        ue-RATSpecificCapability
                                        InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- UTRAN mobility IEs
       ura-Identity
                                         URA-Identity
                                                                               OPTIONAL.
    -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo
                                         NAS-SystemInformationGSM-MAP,
        cn-DomainInformationList
                                        CN-DomainInformationList
                                                                               OPTIONAL.
    -- Measurement IEs
                                         OngoingMeasRepList
        ongoingMeasRepList
                                                                              OPTIONAL,
    -- Radio bearer IEs
        PredefinedConfigStatusList

PredefinedConfigStatusList

PredefinedConfigStatusList,

SPB_InformationSetupList,
                                        SRB-InformationSetupList,
        srb-InformationList
        rab-InformationList
                                        RAB-InformationSetupList
                                                                              OPTIONAL.
    -- Transport channel IEs
        ul-CommonTransChInfo
                                       UL-CommonTransChInfo
                                                                               OPTIONAL,
        ul-TransChInfoList
                                         UL-AddReconfTransChInfoList
                                                                              OPTIONAL,
        modeSpecificInfo
                                         CHOICE {
                                             SEQUENCE {
            fdd
                -- dummy and dummy2 are not used in this version of the specification, they should
                -- not be sent and if received they should be ignored.
                                                 CPCH-SetID
                dummv
                                                                               OPTIONAL,
                                                 DRAC-StaticInformationList OPTIONAL
                dummy2
            },
            tdd
                                             NULL
        dl-CommonTransChInfo
                                       DL-CommonTransChInfo
                                                                               OPTIONAL.
        dl-TransChInfoList
                                        DL-AddReconfTransChInfoList
                                                                              OPTIONAL,
    -- Measurement report
        measurementReport
                                        MeasurementReport
                                                                               OPTIONAL
}
SRNC-RelocationInfo-v380ext-IEs ::= SEQUENCE {
    -- Ciphering related information IEs
        -- In the SRNC-RelocationInfo-r3-IEs, the IE 'cn-DomainIdentity' is used to represent the
        -- IE 'Latest configured CN domain' in the tabular.
        cn-DomainIdentity
                                             CN-DomainIdentity,
        cipheringStatusList
                                             CipheringStatusList
}
SRNC-RelocationInfo-v390ext-IEs ::= SEQUENCE {
        cn-DomainInformationList-v390ext CN-DomainInformationList-v390ext
                                                                                       OPTIONAL,
        ue-RadioAccessCapability-v370ext
ue-RadioAccessCapability-v380ext
UE-RadioAccessCapability-v380ext
UE-RadioAccessCapability-v380ext
UE-RadioAccessCapability-v380ext
                                                                                       OPTIONAL.
                                                                                       OPTIONAL.
        dl-PhysChCapabilityFDD-v380ext DL-PhysChCapabilityFDD-v380ext,
        failureCauseWithProtErr
                                             FailureCauseWithProtErr
                                                                                       OPTIONAL
}
{\tt SRNC-RelocationInfo-v3a0ext-IEs} \ ::= \ {\tt SEQUENCE} \ \big\{
        cipheringInfoForSRB1-v3a0ext CipheringInfoPerRB-List-v3a0ext,
        ue-RadioAccessCapability-v3a0ext
                                             UE-RadioAccessCapability-v3a0ext
                                                                                       OPTIONAL,
        -- cn-domain identity for IE startValueForCiphering-v3a0ext is specified
        -- in subsequent extension (SRNC-RelocationInfo-v3b0ext-IEs)
                                             START-Value
        startValueForCiphering-v3a0ext
}
SRNC-RelocationInfo-v3b0ext-IEs ::= SEOUENCE {
        -- cn-domain identity for IE startValueForCiphering-v3a0ext included in previous extension
        cn-DomainIdentity
                                        CN-DomainIdentity,
        -- the IE startValueForCiphering-v3b0ext contains the start values for each CN Domain. The
        -- value of start indicated by the IE startValueForCiphering-v3a0ext should be set to the
        -- same value as the start-Value for the corresponding cn-DomainIdentity in the IE \,
```

```
-- startValueForCiphering-v3b0ext
       startValueForCiphering-v3b0ext
                                         STARTList2
                                                                                OPTIONAL
}
SRNC-RelocationInfo-v3c0ext-IEs ::= SEQUENCE {
       -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
       -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
       -- Only included if type is "UE involved"
                                                          OPTIONAL
       rb-IdentityForHOMessage
                                         RB-Identity
SRNC-RelocationInfo-v3d0ext-IEs ::= SEQUENCE {
   -- User equipment IEs
       uESpecificBehaviourInformation1idle UESpecificBehaviourInformation1idle OPTIONAL, uESpecificBehaviourInformation1interRAT UESpecificBehaviourInformation1interRAT
}
SRNC-RelocationInfo-v3g0ext-IEs ::= SEQUENCE {
       ue-RadioAccessCapability-v3g0ext UE-RadioAccessCapability-v3g0ext
                                                                              OPTIONAL
SRNC-RelocationInfo-v3h0ext-IEs ::= SEQUENCE {
       tpc-CombinationInfoList TPC-CombinationInfoList OPTIONAL,
       nonCriticalExtension
                                         SEQUENCE {}
                                                                OPTIONAL
}
SRNC-RelocationInfo-v4d0ext-IEs ::= SEQUENCE {
       tpc-CombinationInfoList TPC-CombinationInfoList OPTIONAL
}
TPC-CombinationInfoList ::= SEQUENCE (SIZE (1..maxRL)) OF
       TPC-Combination-Info
                                  SEQUENCE (SIZE (2..maxCNdomains)) OF
STARTList2 ::=
                                     STARTSingle
SRNC-RelocationInfo-v4b0ext-IEs ::= SEQUENCE {
       }
SRNC-RelocationInfo-v590ext-IEs ::= SEQUENCE {
       ue-RadioAccessCapability-v590ext UE-RadioAccessCapability-v590ext OPTIONAL,
ue-RATSpecificCapability-v590ext InterRAT-UE-RadioAccessCapability-v590ext OPTIONAL
}
SRNC-RelocationInfo-v5a0ext-IEs ::= SEQUENCE {
       storedCompressedModeInfo StoredCompressedModeInfo OPTIONAL
SRNC-RelocationInfo-v5b0ext-IEs ::= SEQUENCE {
   OPTIONAL
SRNC-RelocationInfo-v5c0ext-IEs ::= SEQUENCE {
       OPTIONAL
CipheringInfoPerRB-List-v3a0ext ::= SEQUENCE {
       dl-UM-SN
                                     BIT STRING (SIZE (7))
CipheringStatusList ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
                                     CipheringStatusCNdomain
CipheringStatusCNdomain ::=
cn-DomainIdentity
                                   SEQUENCE {
                                      CN-DomainIdentity,
                                     CipheringStatus
       cipheringStatus
}
CodeChangeStatusList ::= SEQUENCE (SIZE (1..maxRL)) OF
       CodeChangeStatus
CodeChangeStatus ::= SEQUENCE {
       primaryCPICH-Info PrimaryCPICH-Info, scramblingCodeChange ScramblingCodeChange
                                         ScramblingCodeChange
}
```

```
StoredCompressedModeInfo ::= SEQUENCE {
        storedTGP-SequenceList StoredTGP-SequenceList, codeChangeStatusList CodeChangeStatusList
                                                                  OPTIONAL
}
StoredTGP-SequenceList ::=
                                     SEQUENCE (SIZE (1..maxTGPS)) OF
                                            StoredTGP-Sequence
                                        SEQUENCE {
StoredTGP-Sequence ::=
    tapsi
                                            TGPSI,
    current-tgps-Status
                                             CHOICE {
                                                 SEQUENCE {
        active
             tgcfn
                                                      TGCFN
         inactive
                                                 NULL
    }.
    tgps-ConfigurationParams
                                            TGPS-ConfigurationParams
                                                                                    OPTIONAL
}
SRNC-RelocationInfo-r4-IEs ::=
                                            SEQUENCE {
     -- Non-RRC IEs
         -- IE \operatorname{rb-IdentityForHOMessage} includes the identity of the RB used by the source SRNC
         -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
         -- Only included if type is "UE involved"
         rb-IdentityForHOMessage
                                        RB-Identity
                                                                                     OPTIONAL.
         stateOfRRC
                                            StateOfRRC,
                                  StateOfRRC-Procedure,
         stateOfRRC-Procedure
    -- Ciphering related information IEs
        cipneringStatusList CipheringStatusList-r4,
latestConfiguredCN-Domain CN-DomainIdentity,
calculationTimeForCiphering CalculationTimeForCipher
count-C-List COUNT-C-List
cipheringInfoPerRB-List CipheringInfoPerRB-List
                                             CalculationTimeForCiphering
                                                                                     OPTIONAL.
                                            CipheringInfoPerRB-List-r4
                                                                                     OPTIONAL,
    -- Integrity protection related information IEs
         integrityProtectionStatus IntegrityProtectionStatus,
         -- The target RNC may ignore the IE srb-SpecificIntegrityProtInfo if the
         -- IE integrityProtectionStatus has the value "not started".
        srb-SpecificIntegrityProtInfo implementationSpecificParams ImplementationSpecificParams ImplementationSpecificParams
                                                                                     OPTIONAL,
    -- User equipment IEs
        u-RNTI
                                            U-RNTI,
                                            C-RNTI
        C-RNTI
                                                                                     OPTIONAL.
        ue-RadioAccessCapability
        ue-RadioAccessCapability UE-RadioAccessCapability-r4,
ue-RadioAccessCapability-ext UE-RadioAccessCapabBandFDDLis
ue-Positioning-LastKnownPos UE-Positioning-LastKnownPos
                                            UE-RadioAccessCapabBandFDDList
                                                                                     OPTIONAL,
                                                                                     OPTIONAL,
         uESpecificBehaviourInformation1idle
                                                     UESpecificBehaviourInformation1idle
                                                                                                   OPTIONAL,
        uESpecificBehaviourInformation1interRAT
                                                          UESpecificBehaviourInformation1interRAT
    OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability
                                           InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- UTRAN mobility IEs
                                            URA-Identity
                                                                                     OPTIONAL.
        ura-Identity
    -- Core network IEs
        \verb"cn-CommonGSM-MAP-NAS-SysInfo" NAS-SystemInformationGSM-MAP",
        cn-DomainInformationList
                                            CN-DomainInformationListFull
                                                                                     OPTIONAL,
    -- Measurement IEs
        ongoingMeasRepList
                                             OngoingMeasRepList-r4
                                                                                     OPTIONAL,
    -- Radio bearer IEs
        {\tt predefinedConfigStatusList} \qquad {\tt PredefinedConfigStatusList},
                                            SRB-InformationSetupList,
         srb-InformationList
        rab-InformationList
                                            RAB-InformationSetupList-r4
                                                                                     OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                            UL-CommonTransChInfo-r4
                                                                                     OPTIONAL,
         ul-TransChInfoList
                                            UL-AddReconfTransChInfoList
                                                                                     OPTIONAL,
         -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification,
         -- they should not be sent and if received they should be ignored.
         dummy
                                             CHOICE {
             fdd
                                                 SEQUENCE {
                  dummv1
                                                      CPCH-SetID
                                                                                     OPTIONAL.
                                                      DRAC-StaticInformationList OPTIONAL
                  dummy2
             },
             tdd
                                                 NULL
                                                                                     OPTIONAL,
         dl-CommonTransChInfo
                                            DL-CommonTransChInfo-r4
                                                                                     OPTIONAL,
                                            DL-AddReconfTransChInfoList-r4
        dl-TransChInfoList
                                                                                     OPTIONAL,
    -- Measurement report
                                                                                     OPTIONAL.
        measurementReport
                                            MeasurementReport
         failureCause
                                             FailureCauseWithProtErr
                                                                                     OPTIONAL
```

```
}
                                         SEQUENCE {
SRNC-RelocationInfo-r5-IEs ::=
     -- Non-RRC IEs
        -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
         -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
        -- Only included if type is "UE involved"
        rb-IdentityForHOMessage RB-Identity stateOfRRC StateOfRRC, stateOfRPC-Procedure StateOfPPC-
                                                                                 OPTIONAL,
        stateOfRRC-Procedure
                                          StateOfRRC-Procedure,
    -- Ciphering related information IEs
        cipheringStatusList
latestConfiguredCN-Domain
calculationTimeForCiphering
count-C-List

CipheringStatusList-r4,
CN-DomainIdentity,
CalculationTimeForCiphering
                                                                                 OPTIONAL,
        cipheringInfoPerRB-List Cipheri
                                                                                  OPTIONAL,
                                          CipheringInfoPerRB-List-r4
                                                                                  OPTIONAL.
    -- Integrity protection related information IEs
        integrityProtectionStatus IntegrityProtectionStatus, srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList OPTIONAL,
        -- User equipment IEs
        u-RNTI
                                          U-RNTI,
        c-RNTI
                                           C-RNTI
                                                                                 OPTIONAL,
        ue-RadioAccessCapability
                                          UE-RadioAccessCapability-r5,
        ue-RadioAccessCapability-ext
                                          UE-RadioAccessCapabBandFDDList
                                                                                 OPTIONAL.
        ue-Positioning-LastKnownPos
                                          UE-Positioning-LastKnownPos
                                                                                  OPTIONAL,
        uESpecificBehaviourInformation1idle
                                           UESpecificBehaviourInformation1idle
                                                                                    OPTIONAL,
        uESpecificBehaviourInformation1interRAT
                                           UESpecificBehaviourInformationlinterRAT
                                                                                          OPTIONAL.
    -- Other IEs
        ue-RATSpecificCapability
                                          InterRAT-UE-RadioAccessCapabilityList-r5
    -- UTRAN mobility IEs
        ura-Identity
                                          URA-Identity
                                                                                  OPTIONAL.
    -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP, cn-DomainInformationList CN-DomainInformationListFull
                                                                                OPTIONAL,
    -- Measurement IEs
        ongoingMeasRepList
                                          OngoingMeasRepList-r5
                                                                                  OPTIONAL,
    -- Radio bearer IEs
        predefinedConfigStatusList PredefinedConfigStatusList, srb-InformationList SRB-InformationSetupList-r5, rab-InformationList RAB-InformationSetupList-r5
                                          RAB-InformationSetupList-r5
                                                                                OPTIONAL,
        rab-InformationList
    -- Transport channel IEs
        rransport cnannel les
ul-CommonTransChInfo UL-CommonTransChInfo-r4
        ul-TransChInfoList
                                          UL-AddReconfTransChInfoList
                                                                                 OPTIONAL,
        -- 'dummy', 'dummy1' and 'dummy2' are not used in this version of the specification,
        -- they should not be sent and if received they should be ignored.
        dummy
                                          CHOICE {
                                               SEQUENCE {
            fdd
                 dummy1
                                                   CPCH-SetID
                                                                                  OPTIONAL.
                                                   {\tt DRAC-StaticInformationList} \quad {\tt OPTIONAL}
                 dummy2
             },
             tdd
                                               NULL
                                                                                 OPTIONAL,
        dl-CommonTransChInfo
                                       DL-CommonTransChInfo-r4
                                                                                 OPTIONAL,
        dl-TransChInfoList
                                          DL-AddReconfTransChInfoList-r5
                                                                                 OPTIONAL,
    -- PhyCH IEs
        tpc-CombinationInfoList
                                         TPC-CombinationInfoList
                                                                                 OPTIONAL.
    -- Measurement report
        measurementReport
                                         MeasurementReport
                                                                                 OPTIONAL,
    -- Other IEs
        failureCause
                                          FailureCauseWithProtErr
                                                                                 OPTIONAL
}
SRNC-RelocationInfo-v690ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        -- IE ueCapabilityContainer is used for the transparent transfer of capability information
        -- received from the UE
        ueCapabilityContainer
                                          BIT STRING
                                               (CONTAINING UE-CapabilityContainer-IEs) OPTIONAL,
        -- IE ueCapabilityContainer-RSC and IE ueCapabilityContainer-UCI are used for the
        -- transparent transfer of capability information received from the UE that was introduced
        -- in a release independent manner, i.e., transferred within a VLEC. These UE capabilities
        -- are included both in the RRC CONNECTION SETUP COMPLETE and the UE CAPABILITY INFORMATION
        -- messages. Only the VLEC of one message needs to be included i.e. the one from these
        -- messages that was last received.
        -- Case 1: If the last received message was a RRC CONNECTION SETUP COMPLETE (RSC)
```

```
ueCapabilityContainer-RSC
                                      BIT STRING
                            (CONTAINING RRCConnectionSetupComplete-r3-add-ext-IEs) OPTIONAL,
        -- Case 2: If the last received message was a UE CAPABILITY INFORMATION (UCI)
        ueCapabilityContainer-UCI
                                   BIT STRING
                            (CONTAINING UECapabilityInformation-r3-add-ext-IEs)
                                                                                    OPTIONAL,
    -- Radio bearer IEs
       rab-InformationSetupList
                                       RAB-InformationSetupList-r6-ext
                                                                            OPTIONAL.
    -- Measurement report
       measuredResultsOnRACHinterFreq MeasuredResultsOnRACHinterFreq
                                                                            OPTIONAL,
    -- MBMS IEs
       mbms-JoinedInformation
                                      MBMS-JoinedInformation-r6
                                                                           OPTIONAL,
    -- Measurement IEs
        intraFreqReportingCriteria IntraFreqReportingCriteria-r6-ext
                                                                                OPTIONAL
}
SRNC-RelocationInfo-r6-IEs ::=
                                        SEQUENCE {
    -- Non-RRC IEs
        -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
        -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
        -- Only included if type is "UE involved"
        rb-IdentityForHOMessage
                                 RB-Identity
                                                                            OPTIONAL.
        stateOfRRC
                                        StateOfRRC,
        stateOfRRC-Procedure
                                       StateOfRRC-Procedure,
    -- Ciphering related information IEs
        cipheringStatusList CipheringStatusList-r4,
latestConfiguredCN-Domain CN-DomainIdentity,
calculationTimeForCiphering CalculationTimeForCiphering
                                                                            OPTIONAL,
                                        COUNT-C-List
        count-C-List
                                                                            OPTIONAL,
        cipheringInfoPerRB-List
                                       CipheringInfoPerRB-List-r4
                                                                            OPTIONAL,
    -- Integrity protection related information IEs
        integrityProtectionStatus
                                        IntegrityProtectionStatus,
        srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList OPTIONAL,
        implementationSpecificParams
                                        ImplementationSpecificParams
                                                                            OPTIONAL,
    -- User equipment IEs
                                        U-RNTI,
        u-RNTI
        c-RNTI
                                        C-RNTI
                                                                            OPTIONAL,
        ue-RadioAccessCapability
                                        UE-RadioAccessCapability-r6,
        ue-RadioAccessCapability-ext
                                        UE-RadioAccessCapabBandFDDList
                                                                            OPTIONAL,
        ue-Positioning-LastKnownPos
                                       UE-Positioning-LastKnownPos
                                                                            OPTIONAL.
        uESpecificBehaviourInformation1idle
                                        UESpecificBehaviourInformation1idle
        {\tt uESpecificBehaviourInformation1interRAT}
                                        {\tt UESpecificBehaviourInformation1interRAT}
                                                                                    OPTIONAL,
        -- IE ueCapabilityContainer is used for the transparent transfer of capability information
        -- received from the UE
        ueCapabilityContainer
                                        BIT STRING
                                            (CONTAINING UE-CapabilityContainer-IEs) OPTIONAL,
        -- IE ueCapabilityContainer-RSC and IE ueCapabilityContainer-UCI are used for the
        -- transparent transfer of capability information received from the UE that was introduced
        -- in a release independent manner, i.e., transferred within a VLEC. These UE capabilities
        -- are included both in the RRC CONNECTION SETUP COMPLETE and the UE CAPABILITY INFORMATION
        -- messages. Only the VLEC of one message needs to be included i.e. the one from these
        -- messages that was last received.
        -- Case 1: If the last received message was a RRC CONNECTION SETUP COMPLETE (RSC)
        ueCapabilityContainer-RSC BIT STRING
                            (CONTAINING RRCConnectionSetupComplete-r3-add-ext-IEs) OPTIONAL,
        -- Case 2: If the last received message was a UE CAPABILITY INFORMATION (UCI)
        ueCapabilityContainer-UCI
                                      BIT STRING
                            (CONTAINING UECapabilityInformation-r3-add-ext-IEs)
                                                                                    OPTIONAL.
    -- Other TEs
       ue-RATSpecificCapability
                                       InterRAT-UE-RadioAccessCapabilityList-r5
                                                                                    OPTIONAL,
    -- UTRAN mobility IEs
       ura-Identity
                                       URA-Identity
                                                                            OPTIONAL,
    -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo
                                        NAS-SystemInformationGSM-MAP,
        cn-DomainInformationList
                                        CN-DomainInformationListFull
                                                                            OPTIONAL,
    -- Measurement IEs
       ongoingMeasRepList
                                        OngoingMeasRepList-r6
                                                                            OPTIONAL.
                                       InterRATCellInfoIndication
        interRATCellInfoIndication
                                                                            OPTIONAL.
    -- Radio bearer IEs
        predefinedConfigStatusList
PredefinedConfigStatusList,
        srb-InformationList
                                        SRB-InformationSetupList-r6,
       rab-InformationList
                                       RAB-InformationSetupList-r6
                                                                            OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo
                                     UL-CommonTransChInfo-r4
                                                                            OPTIONAL,
        ul-TransChInfoList
                                      UL-AddReconfTransChInfoList-r6
                                                                            OPTIONAL,
        dl-CommonTransChInfo
                                       DL-CommonTransChInfo-r4
                                                                            OPTIONAL,
        dl-TransChInfoList
                                       DL-AddReconfTransChInfoList-r5
                                                                            OPTIONAL,
```

```
TPC-CombinationInfoList storedCompressedModeInfo StoredCompressedModeIn
       -- PhyCH IEs
                                                                                                                                       OPTIONAL,
                                                                   StoredCompressedModeInfo
                                                                                                                                      OPTIONAL,
       -- Measurement report
             measurementReport BIT SIAING

(CONTAINING MeasurementReport)
                                                                                                                                      OPTIONAL.
       -- Other IEs
                                                                      FailureCauseWithProtErr
             failureCause
                                                                                                                                      OPTIONAL,
       -- MBMS IEs
              mbms-JoinedInformation
                                                                    MBMS-JoinedInformation-r6
                                                                                                                                      OPTIONAL
}
SRNC-RelocationInfo-r6-add-ext-IEs ::= SEQUENCE {
              sRNC-RelocationInfo-v7e0ext SRNC-RelocationInfo-v7e0ext-IEs,
v7f0NonCriticalExtensions SEQUENCE {
    sRNC-RelocationInfo-v7f0ext SRNC-RelocationInfo-v7f0ext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
              } OPTIONAL
}
SRNC-RelocationInfo-v6b0ext-IEs ::= SEQUENCE {
               -- The order of the RABs in IE rab-InformationSetupListExt is the same as
              -- in IE rab-InformationSetupList that is included in this message
              rab-InformationSetupListExt RAB-InformationSetupList-v6b0ext OPTIONAL, mbmsSelectedServiceInfo MBMS-SelectedServiceInfo
              mbmsSelectedServiceInfo
                                                                     MBMS-SelectedServiceInfo
}
SRNC-RelocationInfo-r7-IEs ::= SEQUENCE {
       -- Non-RRC IEs
              -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
              -- Only included if type is "UE involved"
              rb-IdentityForHOMessage RB-Identity
                                                                                                                                       OPTIONAL,
              stateOfRRC
                                                                     StateOfRRC.
              stateOfRRC-Procedure
                                                                     StateOfRRC-Procedure,
       -- Ciphering related information IEs
             ciphering related information less
cipheringStatusList CipheringStatusList-r4,
latestConfiguredCN-Domain CN-DomainIdentity,
calculationTimeForCiphering
count-C-List CipheringInfoPerRB-List
CipheringInfoPerRB-List
                                                                                                                                    OPTIONAL,
                                                                                                                                      OPTIONAL,
                                                                                                                                      OPTIONAL,
       -- Integrity protection related information IEs
              integrityProtectionStatus IntegrityProtectionStatus, srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList OPTIONAL,
              -- User equipment IEs
             u-RNTI
                                                                      U-RNTI,
              c-RNTI
                                                                     C-RNTI
                                                                                                                                       OPTIONAL,
              -- IE 'UE-RadioAccessCapability-r6' includes the Rel-5 radio access capability extensions
              -- and earlier. Rel-6 and later extensions are included in IE 'UE-CapabilityContainer-IEs'.
              ue-RadioAccessCapability
                                                                     UE-RadioAccessCapability-r6,
              ue-RadioAccessCapability-ext
                                                                      UE-RadioAccessCapabBandFDDList
                                                                                                                                      OPTIONAL.
                                                                  UE-Positioning-LastKnownPos
              ue-Positioning-LastKnownPos
                                                                                                                                  OPTIONAL,
              uESpecificBehaviourInformation1idle
                                                                       UESpecificBehaviourInformation1idle OPTIONAL,
              {\tt uESpecificBehaviourInformation1interRAT}
                                                                      UESpecificBehaviourInformation1interRAT
              -- IE ueCapabilityconcu.
-- received from the UE

             -- IE ueCapabilityContainer is used for the transparent transfer of capability information
              ueCapabilityContainer
                                                                              (CONTAINING UE-CapabilityContainer-IEs) OPTIONAL,
               -- IE ueCapabilityContainer-RSC and IE ueCapabilityContainer-UCI are used for the
              -- transparent transfer of capability information received from the UE that was introduced
              \operatorname{--} in a release independent manner, i.e., transferred within a VLEC. These UE capabilities
              -- are included both in the RRC CONNECTION SETUP COMPLETE and the UE CAPABILITY INFORMATION
              -- messages. Only the VLEC of one message needs to be included i.e. the one from these
              -- messages that was last received.
-- Case 1: If the last received message was a RRC CONNECTION SETUP COMPLETE (RSC)
              ueCapabilityContainer-RSC
                                                                     BIT STRING
                                                  (CONTAINING RRCConnectionSetupComplete-r3-add-ext-IEs) OPTIONAL,
              -- Case 2: If the last received message was a UE CAPABILITY INFORMATION (UCI)
              ueCapabilityContainer-UCI
                                                                    BIT STRING
                                                 (CONTAINING UECapabilityInformation-r3-add-ext-IEs)
                                                                                                                                                     OPTIONAL,
       -- Other IEs
             ue-RATSpecificCapability
                                                                     InterRAT-UE-RadioAccessCapabilityList-r5 OPTIONAL,
       -- UTRAN mobility IEs
             ura-Identity
                                                                       URA-Identity
                                                                                                                                       OPTIONAL,
                                                                       T-305
              srns-t-305
                                                                                                                                       OPTIONAL,
```

```
-- Core network IEs
       cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
cn-DomainInformationList CN-DomainInformationListFull
                                                                            OPTIONAL,
    -- Measurement IEs
        ongoingMeasRepList OngoingMeasRepList-r7
interRATCellInfoIndication InterRATCellInfoIndication
                                                                             OPTIONAL,
                                                                            OPTIONAL,
    -- Radio bearer IEs
    DL-AddReconfTransChInfoList-r7
        dl-TransChInfoList
                                                                             OPTIONAL,
    -- PhyCH IEs
       tpc-CombinationInfoList TPC-CombinationInfoList OPTIONAL,
storedCompressedModeInfo StoredCompressedModeInfo OPTIONAL,
Measurement report
    -- Measurement report
       MeasurementReport

measurementReport

(CONTAINING MeasurementReport)
                                                                             OPTIONAL.
    -- Other IEs
        failureCause
                                        FailureCauseWithProtErr
                                                                             OPTIONAL,
    -- MBMS IEs
       mbms-JoinedInformation
mbmsSelectedServiceInfo
                                    MBMS-JoinedInformation-r6
MBMS-SelectedServiceInfo
                                                                             OPTIONAL.
                                                                             OPTIONAL
}
SRNC-RelocationInfo-r7-add-ext-IEs ::= SEQUENCE {
        sRNC-RelocationInfo-v7e0ext SRNC-RelocationInfo-v7e0ext-IEs, v7f0NonCriticalExtensions SEQUENCE {
           sRNC-RelocationInfo-v7f0ext SRNC-RelocationInfo-v7f0ext-IEs, nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
}
SRNC-RelocationInfo-v770ext-IEs ::= SEQUENCE {
       thresholdSFN-GPS-TOW-us
                                            ThresholdSFN-GPS-TOW-us
                                                                                      OPTIONAL.
        srns-t-305
                                             T-305
                                                                                      OPTIONAL
}
SRNC-RelocationInfo-v7e0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
      }
SRNC-RelocationInfo-v7f0ext-IEs ::= SEQUENCE {
   -- User equipment IEs
       ue-RadioAccessCapability UE-RadioAccessCapability-v7f0ext OPTIONAL
}
-- IE definitions
CalculationTimeForCiphering ::= SEQUENCE {
                                        CellIdentity,
    cell-Id
    sfn
                                         INTEGER (0..4095)
}
CipheringInfoPerRB ::= SEQUENCE {
                                       BIT STRING (SIZE (20..25)),
    dl-HFN
   ul-HFN
                                        BIT STRING (SIZE (20..25))
CipheringInfoPerRB-r4 ::= SEQUENCE {
                                       RB-Identity,
   rb-Identity
    dl-HFN
                                         BIT STRING (SIZE (20..25)),
   dl-UM-SN
                                        BIT STRING (SIZE (7))
                                                                            OPTIONAL,
                                        BIT STRING (SIZE (20..25))
   ul-HFN
}
-- TABULAR: Cipheringinio....
-- has been replaced with maxRB.
-- SEQUENCE (SIZE (1..maxRB)) OF
-- TABULAR: CipheringInfoPerRB-List, multiplicity value numberOfRadioBearers
CipheringInfoPerRB-List ::=
CipheringInfoPerRB-List-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
                                        CipheringInfoPerRB-r4
```

```
CipheringStatus ::=
                                    ENUMERATED {
                                       started, notStarted }
CipheringStatusList-r4 ::=
                                  SEQUENCE (SIZE (1..maxCNdomains)) OF
                                       CipheringStatusCNdomain-r4
                                 SEQUENCE {
CipheringStatusCNdomain-r4 ::=
        cn-DomainIdentity
                                       CN-DomainIdentity,
        cipheringStatus
                                        CipheringStatus,
                                        START-Value
        start-Value
}
CN-DomainInformation-v390ext ::=
                                        SEQUENCE {
   cn-DRX-CycleLengthCoeff
                                        CN-DRX-CycleLengthCoefficient
CN-DomainInformationList-v390ext ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CN-DomainInformation-v390ext
CompressedModeMeasCapability-r4 ::= SEQUENCE {
                                       BOOLEAN,
    fdd-Measurements
    -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements
    \overline{\ } are made optional since they are conditional based on another information element.
    -- Their absence corresponds to the case where the condition is not true.
    tdd384-Measurements
                                       BOOLEAN
                                                                            OPTIONAL.
                                        BOOLEAN
    tdd128-Measurements
                                                                            OPTIONAL,
   gsm-Measurements
                                       GSM-Measurements
                                                                            OPTIONAL,
                                       BOOLEAN
                                                                            OPTIONAL
    multiCarrierMeasurements
COUNT-C-List ::=
                                        SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        COUNT-CSingle
COUNT-CSingle ::=
                                        SEQUENCE {
   cn-DomainIdentity
                                        CN-DomainIdentity,
                                        BIT STRING (SIZE (32))
    count-C
}
                                   SEQUENCE {
DL-PhysChCapabilityFDD-r4 ::=
   -- The IE "maxNoDPCH-PDSCH-Codes" only gives information on the maximum number of DPCH Codes.
   maxNoDPCH-PDSCH-Codes INTEGER (1..8),
maxNoPhysChBitsReceived MaxNoPhysChBits
    maxNoPhysChBitsReceived
                                        MaxNoPhysChBitsReceived,
    supportForSF-512
                                       BOOLEAN,
    -- dummy, dummy2 and dummy3 are not used in this version of the specification
    -- and if received they should be ignored.
    dummv
                                        BOOLEAN,
                                        SimultaneousSCCPCH-DPCH-Reception,
    dummy2
    dummy3
                                        SupportOfDedicatedPilotsForChEstimation OPTIONAL
}
DL-PhysChCapabilityFDD-r5 ::= SEQUENCE {
    -- The IE "maxNoDPCH-PDSCH-Codes" only gives information on the maximum number of DPCH Codes.
   maxNoDPCH-PDSCH-Codes
                                       INTEGER (1..8),
    maxNoPhysChBitsReceived
                                       MaxNoPhysChBitsReceived,
    supportForSF-512
                                       BOOLEAN,
    -- dummy, dumy2 and dummy3 are not used in this version of the specification
    -- and if received they should be ignored.
    dummy
                                        BOOLEAN.
    dummy2
                                        SimultaneousSCCPCH-DPCH-Reception,
    dummy3
                                        SupportOfDedicatedPilotsForChEstimation
                                                                                   OPTIONAL,
    fdd-hspdsch
                                        CHOICE {
        supported
                                           SEQUENCE {
                                               HSDSCH-physical-layer-category,
            hsdsch-physical-layer-category
            -- dummy and dummy2 are not used in this version of the specification
            -- and if received they should be ignored.
           dummy
                                               BOOLEAN,
                                                BOOLEAN
            dummy2
                                           NULL
        unsupported
    }
}
DL-PhysChCapabilityTDD-r5 ::= SEQUENCE {
   maxTS-PerFrame
                                       MaxTS-PerFrame,
    maxPhysChPerFrame
                                        MaxPhysChPerFrame,
    minimumSF
                                        MinimumSF-DL,
```

```
supportOfPDSCH
                                        BOOLEAN,
    maxPhysChPerTS
                                        MaxPhysChPerTS,
    tdd384-hspdsch
                                        CHOICE {
                                            HSDSCH-physical-layer-category,
       supported
        unsupported
                                            NULL
}
DL-PhysChCapabilityTDD-LCR-r5 ::= SEQUENCE {
   maxTS-PerSubFrame
                                        MaxTS-PerSubFrame-r4,
   maxPhysChPerFrame
                                        MaxPhysChPerSubFrame-r4,
    minimumSF
                                        MinimumSF-DL,
    supportOfPDSCH
                                        BOOLEAN,
    maxPhysChPerTS
                                        MaxPhysChPerTS,
    supportOf8PSK
                                        BOOLEAN,
    tdd128-hspdsch
                                       CHOICE {
                                            HSDSCH-physical-layer-category,
        supported
        unsupported
                                            NULL
}
                                    SEQUENCE {
DL-RFC3095-Context ::=
    rfc3095-Context-Identity
                                       INTEGER (0..16383),
                                       ENUMERATED {u, o, r},
    dl-mode
                                        OCTET STRING ( SIZE (1..3000)),
    dl-ref-ir
   dl-ref-time
                                        INTEGER (0..4294967295) OPTIONAL,
    dl-curr-time
                                       INTEGER (0..4294967295)
                                                                    OPTIONAL,
                                        INTEGER (0..65535)
    dl-syn-offset-id
                                                                    OPTIONAL,
                                        INTEGER (0..4294967295) OPTIONAL,
   dl-syn-slope-ts
                                       BOOLEAN
    dl-dyn-changed
                                  BIT STRING (SIZE (1..512))
ImplementationSpecificParams ::=
                                    ENUMERATED {
IntegrityProtectionStatus ::=
                                       started, notStarted }
InterRAT-UE-RadioAccessCapabilityList-r5 ::=
                                                SEQUENCE {
    {\tt interRAT-UE-RadioAccessCapability} \qquad {\tt InterRAT-UE-RadioAccessCapabilityList},
    geranIu-RadioAccessCapability
                                       GERANIu-RadioAccessCapability
                                                                                     OPTIONAL
}
IntraFreqReportingCriteria-r6-ext ::= SEQUENCE {
   -- The content of the v690 non-critical extension should be
    -- considered as an extension of IE IntraFreqEventCriteriaList
   event.
                                        Event1j-r6,
   hysteresis
                                        Hysteresis,
    timeToTrigger
                                        TimeToTrigger,
                                                                           OPTIONAL
   reportingCellStatus
                                        ReportingCellStatus
}
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
                                       ENUMERATED {
MaxHcContextSpace-r5 ::=
                                            dummy, by1024, by2048, by4096, by8192,
                                            by16384, by32768, by65536, by131072 }
MeasurementCapability-r4 ::=
                                    SEQUENCE {
   downlinkCompressedMode
                                       CompressedModeMeasCapability-r4,
   uplinkCompressedMode
                                        CompressedModeMeasCapability-r4
MeasurementCommandWithType ::=
                                    CHOICE {
   setup
                                        MeasurementType,
    modify
                                        NULL,
                                        NULL
   release
}
                                    CHOICE {
MeasurementCommandWithType-r4 ::=
                                        MeasurementType-r4,
    modify
                                        NULL,
                                        NULL
    release
}
MeasurementCommandWithType-r6 ::=
                                    CHOICE {
                                        MeasurementType-r6,
    setup
    modify
                                        NULL,
```

```
release
                                           NULL
}
MeasurementCommandWithType-r7 ::= CHOICE {
                                           MeasurementType-r7,
    setup
    modify
    release
                                           NULL
}
OngoingMeasRep ::=
                                      SEQUENCE {
    measurementIdentity
                                           MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType
    measurementCommandWithType
                                         MeasurementCommandWithType,
    additionalMeasurementID-List
                                          MeasurementReportingMode
                                                                                 OPTIONAL,
                                          AdditionalMeasurementID-List
                                                                                OPTIONAL
}
OngoingMeasRep-r4 ::=
                                      SEQUENCE {
    measurementIdentity
                                          MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType-r4.
    measurementCommandWithType MeasurementCommandWithType-r4,
measurementReportingMode MeasurementReportingMode
additionalMeasurementID-List AdditionalMeasurementID-List
                                                                                OPTIONAL.
                                                                                 OPTIONAL
}
OngoingMeasRep-r5 ::=
                                      SEQUENCE {
    measurementIdentity
                                         MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType-r4.
    measurementCommandWithType MeasurementCommandWithType-r4,
measurementReportingMode MeasurementReportingMode
additionalMeasurementID-List MeasurementCommand-v590ext CHOICE {
                                                                                  OPTIONAL,
                                                                                 OPTIONAL,
        -- the choice "intra-frequency" shall be used for the case of intra-frequency measurement,
         -- as well as when intra-frequency events are configured for inter-frequency measurement
        intra-frequency
                                               Intra-FreqEventCriteriaList-v590ext,
        inter-frequency
                                               Inter-FreqEventCriteriaList-v590ext
                                               IntraFreqReportingCriteria-1b-r5 OPTIONAL OPTIONAL
            OPTIONAL,
    } OFIIONAL,
intraFreqReportingCriteria-1b-r5
    intraFreqEvent-1d-r5
                                               IntraFreqEvent-1d-r5
}
                                      SEQUENCE {
OngoingMeasRep-r6 ::=
                                      MeasurementIdentity,
    measurementIdentity
                                          MeasurementCommandWithType-r6,
    measurementCommandWithType
                                       MeasurementReportingMode
AdditionalMeasurementID-List
    measurementReportingMode
                                                                                 OPTIONAL.
    additionalMeasurementID-List
                                                                                 OPTIONAL
}
OngoingMeasRep-r7 ::=
                                      SEOUENCE {
                                      MeasurementIdentity,
    measurementIdentity
    measurementCommandWithType
                                          MeasurementCommandWithType-r7,
    measurementReportingMode
                                          MeasurementReportingMode
                                                                                  OPTIONAL,
    additionalMeasurementID-List
                                          AdditionalMeasurementID-List
                                                                                  OPTIONAL
OngoingMeasRepList ::=
                                      SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                           OngoingMeasRep
OngoingMeasRepList-r4 ::=
                                      SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                          OngoingMeasRep-r4
OngoingMeasRepList-r5 ::=
                                      SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                           OngoingMeasRep-r5
OngoingMeasRepList-r6 ::=
                                      SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                           OngoingMeasRep-r6
OngoingMeasRepList-r7 ::=
                                      SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                           OngoingMeasRep-r7
PDCP-Capability-r4 ::=
                                      SEQUENCE {
    losslessSRNS-RelocationSupport
                                          BOOLEAN
    supportForRfc2507
        notSupported
                                               NULL.
                                               {\tt MaxHcContextSpace}
        supported
```

```
supportForRfc3095
                                        CHOICE {
       notSupported
                                           NULL,
                                            SEOUENCE {
        supported
           maxROHC-ContextSessions
                                               MaxROHC-ContextSessions-r4 DEFAULT s16,
                                                INTEGER (0..65535)
            reverseCompressionDepth
                                                                           DEFAULT 0
    }
}
                                    SEQUENCE {
PDCP-Capability-r5 ::=
    losslessSRNS-RelocationSupport
                                        BOOLEAN,
    supportForRfc2507
                                        CHOICE {
        notSupported
                                            NULL,
        supported
                                            MaxHcContextSpace-r5
    }.
                                        CHOICE {
    supportForRfc3095
       notSupported
                                           NULL.
                                            SEQUENCE {
        supported
           maxROHC-ContextSessions
                                               MaxROHC-ContextSessions-r4 DEFAULT s16,
                                                INTEGER (0..65535)
            reverseCompressionDepth
                                                                           DEFAULT 0.
            supportForRfc3095ContextRelocation BOOLEAN
    }
}
PDCP-Capability-r6 ::=
                                    SEQUENCE {
    losslessSRNS-RelocationSupport
                                        BOOLEAN,
    losslessDLRLC-PDUSizeChange
                                        ENUMERATED { true }
                                                                          OPTIONAL,
    supportForRfc2507
                                        CHOICE {
                                            NULL,
       notSupported
                                            MaxHcContextSpace-r5
        supported
    },
    supportForRfc3095
                                        CHOICE {
       notSupported
                                            NULL,
        supported
                                            SEQUENCE {
           maxROHC-ContextSessions
                                               MaxROHC-ContextSessions-r4 DEFAULT s16,
            reverseCompressionDepth
                                                INTEGER (0..65535)
                                                                   DEFAULT 0,
            supportForRfc3095ContextRelocation BOOLEAN
    }
}
PhysicalChannelCapability-r4 ::=
                                        SEQUENCE {
        fddPhysChCapability
                                            SEQUENCE {
           downlinkPhysChCapability
                                               DL-PhysChCapabilityFDD-r4,
            uplinkPhysChCapability
                                                UL-PhysChCapabilityFDD
                                                   OPTIONAL,
        tdd384-PhysChCapability
                                            SEQUENCE {
            downlinkPhysChCapability
                                            DL-PhysChCapabilityTDD,
            uplinkPhysChCapability
                                               UL-PhysChCapabilityTDD
                                                   OPTIONAL,
        tdd128-PhysChCapability
                                            SEQUENCE {
            downlinkPhysChCapability
                                               DL-PhysChCapabilityTDD-LCR-r4,
            uplinkPhysChCapability
                                                UL-PhysChCapabilityTDD-LCR-r4
                                                    OPTIONAL
}
PhysicalChannelCapability-r5 ::=
                                        SEQUENCE {
                                           SEQUENCE {
        fddPhysChCapability
            downlinkPhysChCapability
                                               DL-PhysChCapabilityFDD-r5,
            uplinkPhysChCapability
                                                UL-PhysChCapabilityFDD
                                                   OPTIONAL,
        tdd384-PhysChCapability
                                            SEQUENCE {
                                               DL-PhysChCapabilityTDD-r5,
            downlinkPhysChCapability
            uplinkPhysChCapability
                                                UL-PhysChCapabilityTDD
                                                   OPTIONAL,
        tdd128-PhysChCapability
                                            SEQUENCE {
                                               DL-PhysChCapabilityTDD-LCR-r5,
            downlinkPhysChCapability
                                                UL-PhysChCapabilityTDD-LCR-r4
            uplinkPhysChCapability
                                                    OPTIONAL
}
RF-Capability-r4 ::=
                                    SEQUENCE {
        fddRF-Capability
                                       SEQUENCE {
            ue-PowerClass
                                           UE-PowerClassExt,
            txRxFrequencySeparation
                                           TxRxFrequencySeparation
                                                                        OPTIONAL.
```

```
SEQUENCE {
        tdd384-RF-Capability
                                            UE-PowerClassExt,
            ue-PowerClass
            radioFrequencyBandTDDList
                                            RadioFrequencyBandTDDList,
            chipRateCapability
                                            ChipRateCapability
                                                                        OPTIONAL,
        tdd128-RF-Capability
                                      SEQUENCE {
                                         UE-PowerClassExt,
           ue-PowerClass
            radioFrequencyBandTDDList
                                            RadioFrequencyBandTDDList,
            chipRateCapability
                                            ChipRateCapability
                                                                        OPTIONAL
}
RFC3095-ContextInfo ::= SEQUENCE {
    rb-Identity
                                      RB-Identity,
    rfc3095-Context-List
                                        RFC3095-Context-List
}
                          SEQUENCE (SIZE (1..maxRFC3095-CID)) OF SEQUENCE {
RFC3095-Context-List ::=
                                      DL-RFC3095-Context OPTIONAL,
UL-RFC3095-Context OPTIONAL
   dl-RFC3095-Context
   ul-RFC3095-Context
}
   -Capability-r5 ::=
totalRLC-AM-BufferSize
maximumRLC-WindowSize
maximumAM-EntityNumber
                                  SEQUENCE {
RLC-Capability-r5 ::=
                                  TotalRLC-AM-BufferSize-r5,
                                       MaximumRLC-WindowSize,
                                       MaximumAM-EntityNumberRLC-Cap
}
SRB-SpecificIntegrityProtInfo ::= SEQUENCE {
    ul-RRC-HFN
                                       BIT STRING (SIZE (28)),
    dl-RRC-HFN
                                        BIT STRING (SIZE (28)),
    ul-RRC-SequenceNumber
                                        RRC-MessageSequenceNumber,
    dl-RRC-SequenceNumber
                                        RRC-MessageSequenceNumber
}
SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (4..maxSRBsetup)) OF
                                        SRB-SpecificIntegrityProtInfo
StateOfRRC ::=
                                    ENUMERATED {
                                        cell-DCH, cell-FACH,
                                        cell-PCH, ura-PCH }
StateOfRRC-Procedure ::=
                                    ENUMERATED {
                                        awaitNoRRC-Message,
                                        awaitRB-ReleaseComplete,
                                        awaitRB-SetupComplete,
                                        awaitRB-ReconfigurationComplete,
                                        awaitTransportCH-ReconfigurationComplete,
                                        awaitPhysicalCH-ReconfigurationComplete,
                                        awaitActiveSetUpdateComplete,
                                        awaitHandoverComplete,
                                        sendCellUpdateConfirm,
                                        sendUraUpdateConfirm,
                                        -- dummy is not used in this version of specification
                                        -- It should not be sent
                                        dummy,
                                        otherStates
TotalRLC-AM-BufferSize-r5 ::=
                                    ENUMERATED {
                                        kb10, kb50, kb100, kb150, kb200,
                                        kb300, kb400, kb500, kb750, kb1000 }
TPC-Combination-Info ::= SEQUENCE {
       primaryCPICH-Info
                                            PrimaryCPICH-Info,
        tpc-CombinationIndex
                                            TPC-CombinationIndex
}
UE-MultiModeRAT-Capability-r5 ::= SEQUENCE {
   multiRAT-CapabilityList MultiRAT-Capability,
                                        MultiModeCapability,
    multiModeCapability
    supportOfUTRAN-ToGERAN-NACC
                                       BOOLEAN
}
UE-Positioning-Capability-r4 ::=
                                    SEQUENCE {
    {\tt standaloneLocMethodsSupported} \qquad {\tt BOOLEAN},
    ue-BasedOTDOA-Supported
                                            BOOLEAN,
```

```
networkAssistedGPS-Supported
                                            NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames
                                            BOOLEAN,
    supportForIPDL
                                            BOOLEAN,
                                            BOOLEAN,
    rx-tx-TimeDifferenceType2Capable
    validity-CellPCH-UraPCH
                                            ENUMERATED { true }
                                                                    OPTIONAL,
    sfn-sfnType2Capability
                                            ENUMERATED { true }
                                                                     OPTIONAL
}
UE-Positioning-LastKnownPos ::= SEQUENCE {
        sfn
                                        INTEGER (0..4095),
        cell-id
                                        CellIdentity,
        positionEstimate
                                        PositionEstimate
}
UE-RadioAccessCapability-r4 ::=
                                    SEQUENCE {
                                     AccessStratumReleaseIndicator,
    accessStratumReleaseIndicator
                                        PDCP-Capability-r4,
    pdcp-Capability
    rlc-Capability
                                        RLC-Capability,
    transportChannelCapability
                                        TransportChannelCapability,
    rf-Capability
                                        RF-Capability-r4,
    physicalChannelCapability
                                        PhysicalChannelCapability-r4,
    ue-MultiModeRAT-Capability
                                        UE-MultiModeRAT-Capability,
    securityCapability
                                        SecurityCapability,
    ue-positioning-Capability
                                        UE-Positioning-Capability-r4,
    measurementCapability
                                        MeasurementCapability-r4
                                                                        OPTIONAL
}
UE-RadioAccessCapability-r5 ::=
                                   SEQUENCE {
    accessStratumReleaseIndicator
                                       AccessStratumReleaseIndicator,
    dl-CapabilityWithSimultaneousHS-DSCHConfig
                                        DL-CapabilityWithSimultaneousHS-DSCHConfig OPTIONAL,
   pdcp-Capability
                                        PDCP-Capability-r5,
    rlc-Capability
                                        RLC-Capability-r5,
    transportChannelCapability
                                        TransportChannelCapability,
    rf-Capability
                                        RF-Capability-r4,
    physicalChannelCapability
                                        PhysicalChannelCapability-r5,
    ue-MultiModeRAT-Capability
                                       UE-MultiModeRAT-Capability-r5,
                                        SecurityCapability,
    securityCapability
    ue-positioning-Capability
                                       UE-Positioning-Capability-r4,
    measurementCapability
                                        MeasurementCapability-r4
                                                                        OPTIONAL
UE-RadioAccessCapability-r6 ::=
                                   SEQUENCE {
    accessStratumReleaseIndicator
                                       AccessStratumReleaseIndicator,
    dl-CapabilityWithSimultaneousHS-DSCHConfig
                                        DL-CapabilityWithSimultaneousHS-DSCHConfig OPTIONAL,
    pdcp-Capability
                                        PDCP-Capability-r6,
                                        RLC-Capability-r5,
    rlc-Capability
    transportChannelCapability
                                        TransportChannelCapability,
    rf-Capability
                                        RF-Capability-r4,
    physicalChannelCapability
                                        PhysicalChannelCapability-r5,
    ue-MultiModeRAT-Capability
                                        UE-MultiModeRAT-Capability-r5,
    securityCapability
                                        SecurityCapability,
    ue-positioning-Capability
                                        UE-Positioning-Capability-r4,
    measurement Capability
                                        MeasurementCapability-r4
                                                                        OPTIONAL
}
UL-RFC3095-Context ::=
                                    SEQUENCE {
                                        INTEGER (0..16383),
ENUMERATED {u, o, r},
    rfc3095-Context-Identity
   ul-mode
    ul-ref-ir
                                        OCTET STRING ( SIZE (1..3000)),
                                                                OPTIONAL,
   ul-ref-time
                                        INTEGER (0..4294967295)
    ul-curr-time
                                        INTEGER (0..4294967295)
                                                                    OPTIONAL,
    ul-syn-offset-id
                                        INTEGER (0..65535)
                                                                    OPTIONAL,
                                        INTEGER (0..4294967295)
    ul-syn-slope-ts
                                                                    OPTIONAL
    ul-ref-sn-1
                                        INTEGER (0..65535)
                                                                    OPTIONAL
END
```

## 12 Message transfer syntax

Transfer syntax for RRC PDUs is derived from their ASN.1 definitions by use of Packed Encoding Rules, unaligned as specified in X.691 [49], and with adapted final padding. If special encoding is used, it is indicated in the ECN module defined for each ASN.1 module. The use of special encoding is defined in [14].

The following encoding rules apply in addition to what has been specified in X.691 [49]:

- When a bit string value is placed in a bit-field as specified in 15.6 to 15.11 in [11], the leading bit of the bit string value shall be placed in the leading bit of the bit-field, and the trailing bit of the bit string value shall be placed in the trailing bit of the bit-field.

NOTE: The terms "leading bit" and "trailing bit" are defined in ITU-T Rec. X.680 | ISO/IEC 8824-1. When using the "bstring" notation, the leading bit of the bit string value is on the left, and the trailing bit of the bit string value is on the right.

#### 12.1 Structure of encoded RRC messages

An RRC PDU, which is the bit string that is exchanged between peer entities/ across the radio interface, is the concatenation of a basic production, an extension and padding, in that order.

RRC PDUs shall be mapped to and from RLC SDUs upon transmission and reception as follows:

- when delivering an RRC PDU as an RLC SDU to the RLC layer for transmission, the first bit of the RRC PDU shall be represented as the first bit in the RLC SDU and onwards; and
- upon reception of an RLC SDU from the RLC layer, the first bit of the RLC SDU shall represent the first bit of the RRC PDU and onwards.

#### 12.1.1 Basic production

The 'basic production' is obtained by applying UNALIGNED PER to the abstract syntax value (the ASN.1 description) as specified in X.691, except for the 0 to 7 bits added at the end to produce a multiple of 8 bits. The basic production can have any positive number of bits, not necessarily a multiple of 8 bits.

#### 12.1.2 Extension

Emitters compliant with this version of the specification of the protocol shall, unless indicated otherwise on a PDU type basis, set the extension part empty. Emitters compliant with a later version might send non-empty extensions.

#### 12.1.3 Padding

Emitters compliant with this version of the specification of the protocol shall, unless indicated otherwise on a PDU type basis, pad the basic production with the smallest number of bits required to meet the size constraints of the lower layers. Padding bits shall be set to 0.

Receivers compliant with this version of the specification have no need to distinguish the extension and padding parts, and shall, unless indicated otherwise on a PDU type basis, accept RRC PDUs with any bit string in the extension and padding parts.

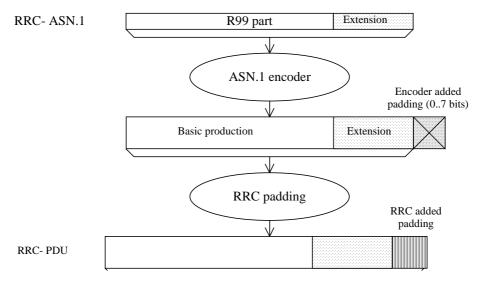


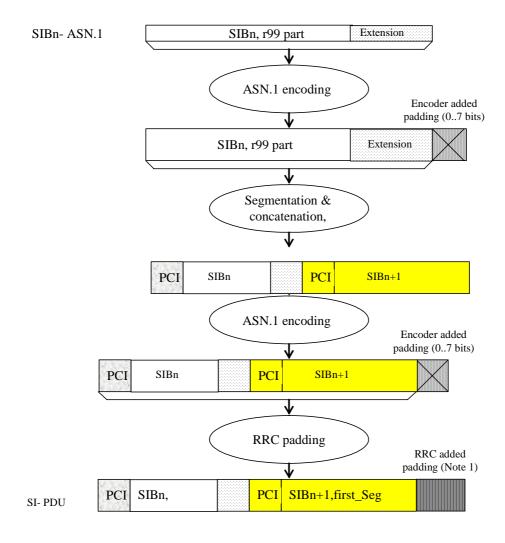
Figure 12.1.3-1: Padding

When using AM or UM mode, RLC requires that the RRC PDU length is a multiple of 8 bits.

When using Tr mode, RLC does neither impose size requirements nor perform padding. This implies that RRC has to take into account the transport format set defined for the transport channel across which the message is to be sent. RRC shall add the lowest number of padding bits required to fit the size specified for the selected transport format.

For paging type 1 messages, in case the PCCH is mapped on HS-DSCH, padding needs to apply only to ensure octet alignment.

For system information blocks, building the PDU involves two steps. The first step is the building of the System Information Blocks, in which step padding is not applied (the rules for extension apply). The second step is the building of the RRC PDUs, involving segmentation and concatenation of System Information Blocks, and then padding as described above for Tr mode if the BCCH carrying the System Information Blocks is mapped on BCH; at this second step, in case the BCCH carrying the System Information Blocks is mapped on HS-DSCH, padding applies to ensure octet alignment. The procedure is shown by means of an example as described in Figure 12.1.3-2. The example includes two System Information Blocks, SIBn and SIBn+1, of which only SIBn includes a protocol extension. The two System Information Blocks used in the example do not require segmentation and are concatenated into one SYSTEM INFORMATION message.



Note 1: RRC padding needs to be added only to octet align BCCH blocks which are mapped onto HS-DSCH

Figure 12.1.3-2: Padding for System Information

PCI: Protocol control information at SYSTEM INFORMATION message level

#### SI: SYSTEM INFORMATION message

For system information blocks, RRC may also add padding information at the end of IE "SIB data fixed", used both within IE "Last segment" and IE "Complete SIB". The IE "SIB data fixed" has a fixed length i.e. no length denominator used. In case the remaining amount of "SIB data" information is insufficient to fill the IE completely, RRC includes padding bits.

Since no length denominator is included, the receiving RRC cannot remove the padding added by the sender. However, since the padding used is the same as the padding added by the PER encoder to achieve octet alignment, the receiver can handle it.

NOTE 1 The mechanism described above implies that the PDU provided to the ASN.1 decoder may have more than 7 padding bits included. For a complete System Information Block of length 215 bits, 11 padding bits are added by RRC. Since the decoder requires an octet aligned input, 6 additional bits need to be added. In this (worst) case, a total of 17 padding bits is included.

NOTE 2 For the above cases, use of padding bits is possible and more efficient than including a length denominator.

When using the RRC padding described above, the segment has a fixed length, which completely fills the transport block. Therefore, in this case no RRC padding is added within the SYSTEM INFORMATION message. This is illustrated by means of the following figure.

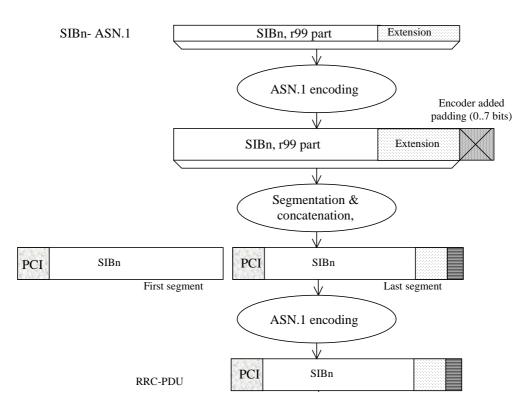


Figure 12.1.3-3: No RRC padding for System Information

#### 12.2 ECN link module for RRC

```
RRC-ECN-Link-Module LINK-DEFINITIONS ::=
BEGIN
IMPORTS
   RRC-encodings
                                 -- Encoding objects for RRC messages
FROM RRC-Encoding-Definitions;
ENCODE Class-definitions
    WITH RRC-encodings
    COMPLETED BY PER-BASIC-UNALIGNED
ENCODE PDU-definitions
    WITH RRC-encodings
    COMPLETED BY PER-BASIC-UNALIGNED
ENCODE InformationElements
    WITH RRC-encodings
    COMPLETED BY PER-BASIC-UNALIGNED
ENCODE Internode-definitions
    WITH RRC-encodings
    COMPLETED BY PER-BASIC-UNALIGNED
END
```

#### 12.3 ECN modules for RRC

The encoding definition module "RRC-Encoding-Definitions" contains definition of the encoding object set "RRC-encodings". The encoding object set contains all the specialized encoding for RRC.

```
{\tt RRC-Encoding-Definitions} \ \ {\tt ENCODING-DEFINITIONS} \ ::=
```

```
BEGIN
EXPORTS
   RRC-encodings;
RRC-encodings #ENCODINGS ::= {
   -- Trailing bits
   outer-encoding
__*********************
-- The trailing bits in all RRC messages shall be ignored
-- (including unknown message contents & unknown extensions).
-- This overrides the default PER behaviour which pads the last
-- octet with zero bits.
__********************
outer-encoding #OUTER ::= {
   ENCODER-DECODER {
   DECODE AS IF {
       POST-PADDING
                     encoder-option
}
END
Class-definitions-ECN-Module ENCODING-DEFINITIONS ::=
PDU-definitions-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
InformationElements-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
END
Internode-definitions-ECN-Module ENCODING-DEFINITIONS ::=
BEGIN
```

#### 12.4 RRC messages encoded otherwise

NOTE: The messages included in this section are not specified by means of ASN.1.

#### 12.4.1 Messages using tabular encoding specification

The encoding of the message is specified by means of a table listing the information elements known in the message and their order of their appearance in the message.

When a field extends over more than one octet, the order of bit values progressively decreases as the octet number increases. The least significant bit of the field is represented by the lowest numbered bit of the highest numbered octet of the field.

## 12.4.1.1 TRANSPORT FORMAT COMBINATION CONTROL using transparent DCCH

#### 12.4.1.1.1 TRANSPORT FORMAT COMBINATION CONTROL, 3 bit format

The 3 bit format is as follows:

| 3 | 2 | 1 | Transport Format Combination Set Identity value |
|---|---|---|---|
| 0 | 0 | 0 | 0   |
| 0 | 0 | 1 | 1   |
| 0 | 1 | 0 | 2   |
|   |   |   |   |
| 1 | 1 | 1 | 7   |

12.4.1.1.2 Void

12.4.1.1.3 Void

# 13 Protocol timers, counters, other parameters and default configurations

The information provided in subclauses 13.1 and 13.2 shall be treated as informative. The normative text is specified in the relevant subclauses in clause 8 and clause 8 shall prevail.

#### 13.1 Timers for UE

| Timer | Start   | Stop   | At expiry   |
|-------|---|--|---|
| T300  | Transmission of RRC CONNECTION REQUEST in case of connection establishment for reasons other than MBMS reception  | Reception of RRC<br>CONNECTION SETUP   | Retransmit RRC CONNECTION<br>REQUEST if V300 =< N300,<br>else go to Idle mode   |
| T302  | Transmission of CELL UPDATE/URA UPDATE  | Reception of CELL UPDATE<br>CONFIRM/URA UPDATE<br>CONFIRM  | Retransmit CELL UPDATE/URA<br>UPDATE if V302 =< N302, else,<br>go to Idle mode  |
| T304  | Transmission of UE<br>CAPABILITY<br>INFORMATION   | Reception of UE CAPABILITY<br>INFORMATION CONFIRM  | Retransmit UE CAPABILITY INFORMATION if V304 =< N304, else initiate a cell update procedure                                       |
| T305  | Entering CELL_FACH or URA_PCH or CELL_PCH state. Reception of CELL UDPATE CONFIRM/URA UPDATE CONFIRM.   | Entering another state.  | Transmit CELL UPDATE if T307 is not activated and the UE detects "in service area". Otherwise, if T307 is not active, start T307. |
| T307  | When the timer T305 has expired and the UE detects "out of service area".   | When the UE detects "in service area".   | Transit to idle mode  |
| T308  | Transmission of RRC CONNECTION RELEASE COMPLETE   | Not stopped  | Transmit RRC CONNECTION RELEASE COMPLETE if V308 <=N308, else go to idle mode.  |
| T309  | Upon reception of CELL<br>CHANGE ORDER FROM<br>UTRAN message  | Successful response to a connection establishment request in the new cell.   | Resume the connection to UTRAN  |
| T310  | Transmission of PUSCH CAPACITY REQUEST  | Reception of PHYSICAL SHARED CHANNEL ALLOCATION  | Transmit PUSCH CAPACITY REQUEST if V310 =< N310, else procedure stops.  |
| T311  | Reception of PHYSICAL SHARED CHANNEL ALLOCATION message with the CHOICE "PUSCH allocation" set to "PUSCH allocation pending".   | Reception of PHYSICAL SHARED CHANNEL ALLOCATION message with CHOICE "PUSCH allocation" set to "PUSCH allocation assignment". | UE may initiate a PUSCH capacity request procedure.   |
| T312  | When the UE starts to establish dedicated CH  | When the UE detects N312 "in sync" indication from L1.   | The criteria for physical channel establishment failure is fulfilled  |
| T313  | When the UE detects consecutive N313 "out of sync" indication from L1.  | When the UE detects consecutive N315 "in sync" indication from L1.   | The criteria for Radio Link failure is fulfilled.   |
| T314  | When the criteria for radio link failure are fulfilled. The timer is started if radio bearer(s) that are associated with T314 exist or if only RRC connection exists only to the CS domain. | When the Cell Update procedure has been completed.   | See subclause 8.3.1.13.   |

| Timer | Start  | Stop  | At expiry   |
|-------|--|---|---|
| T315  | When the criteria for radio link failure are fulfilled. The timer is started only if radio bearer(s) that are associated with T315 exist or if RRC connection exists to PS domain. | When the Cell Update procedure has been completed.                              | See subclause 8.3.1.14.   |
| T316  | When the UE detects "out of service area" in URA_PCH or CELL_PCH state   | When the UE detects "in service area".  | Initiate cell update procedure if in service area is detected. Otherwise start timer T317, transit to CELL_FACH state and initiate cell update procedure when the UE detects "in service area". |
| T317  | When the T316 expires or when in CELL_FACH state, the UE detects "out of service area".  | When the UE detects "in service area".  | T317 never expires.   |
| T318  | Transmission of RRC CONNECTION REQUEST in case of connection establishment for MBMS reception  | Reception of RRC<br>CONNECTION SETUP  | Enter idle mode   |
| T319  | When entering CELL_PCH or URA_PCH.   | When leaving CELL_PCH or URA_PCH state.   | The UE activates starts the DRX cycle based on "DRX cycle length coefficient".  |
| T320  | When receiving the CELL UPDATE CONFIRM message with IE "Wait time" and IE "RRC State Indicator" set to the value "CELL_PCH" or "URA_PCH".  | When initiating the cell update or URA update procedure, see subclause 8.3.1.2. | See subclause 8.3.1.16.   |

## 13.2 Counters for UE

| Counter | Reset   | Incremented          | When reaching max value  |
|---------|---|----------------------|--|
| V300    | When initiating the procedure RRC connection establishment  | Upon expiry of T300. | When V300 > N300, the UE enters idle mode.   |
| V302    | When initiating the procedure Cell update or URA update   | Upon expiry of T302  | When V302 > N302 the UE enters idle mode.  |
| V304    | When sending the first UE CAPABILITY INFORMATION message.   | Upon expiry of T304  | When V304 > N304 the UE initiates the Cell update procedure                                |
| V308    | When sending the first RRC CONNECTION RELEASE COMPLETE message in a RRC connection release procedure. | Upon expiry of T308  | When V308 > N308 the UE stops re-transmitting the RRC CONNECTION RELEASE COMPLETE message. |
| V310    | When sending the first PUSCH CAPACITY REQUEST message in a PUSCH capacity request procedure           | Upon expiry of T310  | When V310 > N310 the UE stops re-transmitting the PUSCH CAPACITY REQUEST message.          |

#### 13.3 UE constants and parameters

| Constant | Usage   |
|----------|---|
| N300     | Maximum number of retransmissions of the RRC CONNECTION REQUEST message           |
| N302     | Maximum number of retransmissions of the CELL UPDATE / URA UPDATE message         |
| N304     | Maximum number of retransmissions of the UE CAPABILITY INFORMATION message        |
| N308     | Maximum number of retransmissions of the RRC CONNECTION RELEASE COMPLETE          |
|          | message   |
| N310     | Maximum number of retransmission of the PUSCH CAPACITY REQUEST message            |
| N312     | Maximum number of "in sync" received from L1.                                     |
| N313     | Maximum number of successive "out of sync" received from L1.                      |
| N315     | Maximum number of successive "in sync" received from L1 during T313 is activated. |

#### 13.4 UE variables

#### 13.4.ob AM\_RLC\_ERROR\_PENDING\_RB234

This variable indicates whether an AM RLC unrecoverable error has been detected during the current cell update procedure on RB 2, 3, or 4.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   |
|--------------------------------|------|-------|--------------------|---|
| AM RLC error pending           | MP   |       | Boolean            | TRUE means an unrecoverable error was detected on AM RLC during the current cell update procedure Set to FALSE when the cell update procedure is completed. |

#### 13.4.oc AM\_RLC\_ERROR\_PENDING\_RB5\_AND\_UP

This variable indicates whether an AM RLC unrecoverable error has been detected during the current cell update procedure on RB 5 or above.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   |
|--------------------------------|------|-------|--------------------|---|
| AM RLC error pending           | MP   |       | Boolean            | TRUE means an unrecoverable error was detected on AM RLC during the current cell update procedure Set to FALSE when the cell update procedure is completed. |

#### 13.4.0 CELL INFO LIST

This variable contains cell information on intra-frequency, inter-frequency and inter-RAT cells, as received in messages System Information Block Type 11, System Information Block Type 12, and MEASUREMENT CONTROL.

The first position in Intra-frequency cell info list corresponds to Intra-frequency cell id 0, the second to Intra-frequency cell id 1, etc.

The first position in Inter-frequency cell info list corresponds to Inter-frequency cell id 0, the second to Inter-frequency cell id 1, etc.

The first position in Inter-RAT cell info list corresponds to Inter-RAT cell id 0, the second to Inter-RAT cell id 1, etc.

This variable shall be cleared at cell re-selection, when leaving UTRA RRC connected mode, when switched off as well as at selection of a new PLMN.

| Information Element/Group                | Need | Multi                              | Type and   | Semantics description   | Version |
|--|------|------------------------------------|--|---|---------|
| name                                     |      |                                    | reference  |   |         |
| Intra-frequency cell info                | OP   | 1 <maxcel<br>IMeas&gt;</maxcel<br> |  |   |         |
| >CHOICE position status                  | MP   |                                    |  |   |         |
| >>Occupied                               |      |                                    |  |   |         |
| >>>Cell info                             | MP   |                                    | Cell info<br>10.3.7.2  |   |         |
| >>Vacant                                 |      |                                    |  | No data   |         |
| Inter-frequency cell info                | OP   | 1 <maxcel<br>IMeas&gt;</maxcel<br> |  |   |         |
| >CHOICE position status                  | MP   |                                    |  |   |         |
| >>Occupied                               |      |                                    |  |   |         |
| >>>Frequency info                        | MP   |                                    | Frequency<br>info<br>10.3.6.36   |   |         |
| >>>Cell info                             | MP   |                                    | Cell info<br>10.3.7.2  |   |         |
| >>Vacant                                 |      |                                    |  | No data   |         |
| Inter-RAT cell info list                 | OP   |                                    |  |   | REL-5   |
| >Inter-RAT cell info                     | OP   | 1 <maxcel<br>IMeas&gt;</maxcel<br> |  |   |         |
| >>CHOICE position status                 | MP   |                                    |  |   |         |
| >>>Occupied                              |      |                                    |  |   |         |
| >>>>CHOICE Radio Access                  |      |                                    |  |   |         |
| Technology                               |      |                                    |  |   |         |
| >>>>GSM                                  |      |                                    |  |   |         |
| >>>>>Cell selection and reselection info | MP   |                                    | Cell<br>selection<br>and re-<br>selection info<br>for SIB11/12<br>10.3.2.4               |   |         |
| >>>>BSIC                                 | MP   |                                    | BSIC<br>10.3.8.2   |   |         |
| >>>>BCCH ARFCN                           | MP   |                                    | Integer<br>(01023)   | [43]  |         |
| >>>>IS-2000                              |      |                                    |  |   |         |
| >>>>>System specific measurement info    |      |                                    | enumerated<br>(frequency,<br>timeslot,<br>colour code,<br>output<br>power, PN<br>offset) | For IS-2000, use fields from<br>TIA/EIA/IS-2000.5,<br>subclause 3. 7.3.3.2.27,<br>Candidate Frequency<br>Neighbour List Message |         |
| >>>Vacant                                |      |                                    | ·  | No data   |         |
| >CHOICE indication status                | MP   |                                    |  |   | REL-5   |
| >>Present                                |      |                                    |  |   | REL-5   |
| >>>Inter-RAT cell info indication        | OP   |                                    | Integer (03)   |   | REL-5   |
| >>Not present                            |      |                                    | ` ` ′  | No data   | REL-5   |

#### 13.4.00 Void

#### 13.4.0a CELL\_UPDATE\_STARTED

This variable indicates whether a cell update or URA update procedure is in progress.

| Information Element/Group | Need | Multi | Type and  | Semantics description  |
|---------------------------|------|-------|-----------|--|
| name                      |      |       | reference |  |
| Cell update started       | MP   |       | Boolean   | TRUE means a cell or URA update procedure is in progress. Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode. |

#### 13.4.1 CIPHERING\_STATUS

This variable contains information about the current status of ciphering in the UE.

| Information Element/Group name | Need | Multi                      | Type and reference                      | Semantics description  |
|--------------------------------|------|----------------------------|---|--|
| Status for each CN domain      | MP   | <1 to<br>maxCNDo<br>mains> |   |  |
| >CN domain identity            | MP   |                            | CN domain identity 10.3.1.1             |  |
| >Status                        | MP   |                            | Enumerated(<br>Not started,<br>Started) | Set to "Not started" when entering UTRA RRC connected mode. Set to "Not started" when leaving UTRA RRC connected mode.   |
| Reconfiguration                | MP   |                            | Boolean                                 | TRUE means an RRC procedure performing reconfiguration of ciphering is ongoing. Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode. |

#### 13.4.2 Void

#### 13.4.2a CONFIGURATION\_INCOMPLETE

This variable indicates whether a received measurement control message contains invalid an incomplete measurement configuration.

| Information Element/Group | Need | Multi | Type and  | Semantics description   |
|---------------------------|------|-------|-----------|---|
| name                      |      |       | reference |   |
| Configuration incomplete  | MP   |       | Boolean   | TRUE: An incomplete configuration has been detected. Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode. |

#### 13.4.3 C\_RNTI

This variable stores the assigned C-RNTI for this UE when in CELL\_FACH state. For FDD, this variable stores the assigned C-RNTI for this UE in CELL\_PCH state, if in CELL\_PCH state a HS-DSCH transport channel has been allocated.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   |
|--------------------------------|------|-------|--------------------|---|
| C-RNTI                         | OP   |       | C-RNTI<br>10.3.3.8 | Cleared when entering UTRA RRC connected mode when not otherwise stated in the procedure. Cleared when leaving UTRA RRC connected mode. |

#### 13.4.3a DEFERRED\_MEASUREMENT\_STATUS

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   | Version |
|--------------------------------|------|-------|--------------------|---|---------|
| Deferred measurement status    | MP   |       | Boolean            | If TRUE, the UE can transmit RRC messages on RACH and receive RRC messages commanding it to enter CELL_DCH without having read and acted on SIB11, SIB11bis and 12. | REL-7   |

#### 13.4.3b DTX\_DRX\_PARAMS

NOTE: For FDD only.

| Information Element/Group name | Need | Multi | Type and reference                      | Semantics description | Version |
|--------------------------------|------|-------|---|-----------------------|---------|
| UE parameters for DTX-DRX      | MD   |       | DTX-DRX<br>Information<br>in 10.3.6.34a |                       | REL-7   |

#### 13.4.3c DTX\_DRX\_STATUS

NOTE: For FDD only.

This variable indicates whether discontinuous UL DPCCH transmission and discontinuous reception of F-DPCH and HSPA DL channel procedures are ongoing. See subclause 8.5.34 for actions related to the setting of this variable.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  | Version |
|--------------------------------|------|-------|--------------------|--|---------|
| DTX_DRX_STATUS                 | MP   |       | Boolean            | TRUE: discontinuous transmission and reception is ongoing. Set to FALSE when entering UTRA RRC connected mode when not otherwise stated in the procedure. Set to FALSE when leaving UTRA RRC connected mode. | REL-7   |

#### 13.4.3d DSAC\_PARAM

This variable contains Domain Specific Access Restriction Parameters during the connected mode.

| Information Element/Group name           | Need | Multi | Type and reference                           | Semantics description   | Version |
|--|------|-------|--|---|---------|
| CS Domain Specific Access<br>Restriction | MP   |       | Domain<br>Access<br>Restriction<br>10.3.1.3b | This IE contains CS Domain Specific Access Restriction Parameters | REL-6   |
| PS Domain Specific Access<br>Restriction | MP   |       | Domain<br>Access<br>Restriction<br>10.3.1.3b | This IE contains PS Domain Specific Access Restriction Parameters | REL-6   |

#### 13.4.3e DSCH\_RNTI

In TDD this variable stores the assigned DSCH-RNTI for this UE when in CELL\_DCH state.

| Information Element/Group name | Need | Multi | Type and reference     | Semantics description   |
|--------------------------------|------|-------|------------------------|---|
| DSCH-RNTI                      | OP   |       | DSCH-RNTI<br>10.3.3.9a | Cleared when entering UTRA RRC connected mode when not otherwise stated in the procedure. Cleared when leaving UTRA RRC connected mode. |

#### 13.4.4 Void

### 13.4.40 E\_DCH\_TRANSMISSION

This variable indicates whether E-DPDCH and E-DPCCH transmission procedures are ongoing. See subclause 8.5.28 for actions related to the setting of this variable.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  | Version |
|--------------------------------|------|-------|--------------------|--|---------|
| E-DCH transmission             | MP   |       | Boolean            | TRUE: E-DCH transmission is ongoing. Set to FALSE when entering UTRA RRC connected mode when not otherwise stated in the procedure. Set to FALSE when leaving UTRA RRC connected mode. | REL-6   |

#### 13.4.4a E\_RNTI

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description   | Version |
|--------------------------------|------|-------|----------------------|---|---------|
| Primary E-RNTI                 | OP   |       | E-RNTI<br>10.3.3.10a | Cleared when entering UTRA RRC connected mode when not otherwise stated in the procedure. Cleared when leaving UTRA RRC connected mode. | REL-6   |
| Secondary E-RNTI               | OP   |       | E-RNTI<br>10.3.3.10a | Cleared when entering UTRA RRC connected mode when not otherwise stated in the procedure. Cleared when leaving UTRA RRC connected mode. | REL-6   |

#### 13.4.5 ESTABLISHED\_RABS

This variable is used to store information about the established radio access bearers and signalling radio bearers in the UE.

| Information Element/Group name      | Need | Multi                                      | Type and reference                  | Semantics description   |
|-------------------------------------|------|--|-------------------------------------|---|
| RAB information                     | OP   | 1 to<br><maxrabs<br>etup&gt;</maxrabs<br>  |                                     | For each RAB established. Cleared when entering UTRA RRC connected mode when not otherwise stated in the procedure. Cleared when leaving UTRA RRC connected mode. |
| >RAB info                           | MP   |  | RAB info<br>10.3.4.8                |   |
| >RB information                     | MP   | 1 to<br><maxrbpe<br>r RAB&gt;</maxrbpe<br> |                                     | For each RB belonging to the RAB  |
| >>RB identity                       | MP   |  | RB identity<br>10.3.4.16            |   |
| >>Subflow                           | MP   |  | Integer(0<<br>maxSubflow<br>count>) | Reference to the RAB subflow implemented by this RB   |
| >>RB started                        | MD   |  | Enumerated(<br>stopped,<br>started) | Default value is started  |
| Signalling radio bearer information | OP   | 1 to < maxSRBse tup>                       |                                     | In the order of RB0 and upwards. Cleared when leaving UTRA RRC connected mode.  |
| >RB started                         | MD   |  | Enumerated(<br>stopped,<br>started) | Default value is started  |

#### 13.4.5a ESTABLISHED\_SIGNALLING\_CONNECTIONS

This variable is used to store information about established signalling connections.

| Information Element/Group name  | Need | Multi                                      | Type and reference          | Semantics description   |
|---------------------------------|------|--|-----------------------------|---|
| Signalling connection list      | OP   | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br> |                             | For each established signalling connection. Cleared when entering UTRA RRC connected mode when not otherwise stated in the procedure. Cleared when leaving UTRA RRC connected mode. |
| >Signalling connection identity | MP   |  | CN domain identity 10.3.1.1 |   |

#### 13.4.6 ESTABLISHMENT\_CAUSE

This variable is used to store the cause for establishment of a signalling connection received by upper layers, to be used at RRC connection establishment or Initial Direct Transfer.

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description                         |
|--------------------------------|------|-------|----------------------|---|
| Establishment cause            | OP   |       | Establishme nt cause | Cleared when leaving UTRA RRC connected mode. |
|                                |      |       | 10.3.3.11            |   |

#### 13.4.7 FAILURE\_CAUSE

This variable contains the cause for failure of a UE initiated procedure, to be reported in a retransmitted message.

| Information Element/Group name | Need | Multi | Type and reference            | Semantics description  |
|--------------------------------|------|-------|-------------------------------|--|
| Failure cause                  | OP   |       | Failure<br>cause<br>10.3.3.13 | Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode. |

#### 13.4.8 FAILURE\_INDICATOR

This variable indicates whether the procedure has failed for a UE initiated procedure.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| Failure indicator              | MP   |       | Boolean            | TRUE: Procedure has failed. Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode. |

#### 13.4.80 H\_RNTI

This variable stores the assigned H-RNTI for this UE when in CELL-DCH, CELL\_FACH (FDD only) or CELL\_PCH (FDD only) state, and when an HS-DSCH transport channel has been allocated.

| Information Element/Group | Need | Multi | Type and             | Semantics   | Version |
|---------------------------|------|-------|----------------------|---|---------|
| name                      |      |       | reference            | description   |         |
| H-RNTI                    | OP   |       | H-RNTI<br>10.3.3.14a | Cleared when entering UTRA RRC connected mode when not otherwise stated in the procedure. Cleared when leaving UTRA | REL-5   |
|                           |      |       |                      | RRC connected mode.   |         |

#### 13.4.800 HS\_DSCH\_RECEPTION

This variable indicates whether HS-SCCH and HS-DSCH reception procedures are ongoing. See subclause 8.5.25 for actions related to the setting of this variable.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   | Version |
|--------------------------------|------|-------|--------------------|---|---------|
| HS-DSCH reception              | MP   |       | Boolean            | TRUE: HS-DSCH reception is ongoing. Set to FALSE when entering UTRA RRC connected mode when not otherwise stated in the procedure. Set to FALSE when leaving UTRA RRC connected mode. | REL-5   |

#### 13.4.8oa HS\_DSCH\_RECEPTION\_CELL\_FACH\_STATE

This variable indicates whether HS-SCCH and HS-DSCH reception procedures are ongoing in CELL\_FACH for BCCH, DCCH and, if configured, DTCH reception. See subclause 8.5.36 for actions related to the setting of this variable.

NOTE: FDD only.

| Information Element/Group name       | Need | Multi | Type and reference | Semantics description   | Version |
|--------------------------------------|------|-------|--------------------|---|---------|
| HS-DSCH reception in CELL_FACH state | MP   |       | Boolean            | TRUE: HS-DSCH reception in CELL_FACH is ongoing. Set to FALSE when entering UTRA RRC connected mode, CELL_PCH, URA_PCH and CELL_DCH. Set to FALSE when leaving UTRA RRC connected mode. | REL-7   |

#### 13.4.8ob HS\_DSCH\_RECEPTION\_OF\_CCCH\_ENABLED

This variable indicates whether HS-SCCH and HS-DSCH reception procedures are enabled for CCCH and BCCH, and for SRB1 if the UE is in CELL\_FACH state. See subclause 8.5.37 for actions related to the setting of this variable.

NOTE: For FDD only.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  | Version |
|--------------------------------|------|-------|--------------------|--|---------|
| HS-DSCH reception of CCCH      | MP   |       | Boolean            | TRUE: HS-DSCH reception for the CCCH is enabled. Set to FALSE when leaving UTRA RRC connected mode. Set to FALSE when entering CELL_PCH, URA_PCH and CELL DCH. | REL-7   |

#### 13.4.8oc HS\_DSCH\_RECEPTION\_GENERAL

This variable indicates whether HS-SCCH and HS-DSCH reception procedures are ongoing in CELL\_DCH, CELL\_FACH, CELL\_PCH, or URA\_PCH. See subclause 8.5.37a for actions related to the setting of this variable.

NOTE: FDD only.

| Information Element/Group       | Need | Multi | Type and  | Semantics   | Version |
|---------------------------------|------|-------|-----------|---|---------|
| name                            |      |       | reference | description   |         |
| HS-DSCH reception in all states | MP   |       | Boolean   | TRUE: HS-DSCH reception in CELL_DCH, FACH, CELL_PCH or URA_PCH is ongoing. Set to FALSE when entering UTRA RRC connected mode when not otherwise stated in the procedure. Set to FALSE when leaving UTRA RRC connected mode | REL-7   |

#### 13.4.8000 HS\_SCCH\_LESS\_PARAMS

NOTE: For FDD only.

This variable contains the parameters for UE operation in HS-SCCH less mode. The parameters are listed in subclause 10.3.6.36ab.

| Information Element/Group | Need | Multi | Type and    | Semantics   | Version |
|---------------------------|------|-------|-------------|-------------|---------|
| name                      |      |       | reference   | description |         |
| UE parameters for HS-SCCH | MD   |       | HS-SCCH     |             | REL-7   |
| less                      |      |       | less        |             |         |
|                           |      |       | Information |             |         |
|                           |      |       | in          |             |         |
|                           |      |       | 10.3.6.36ab |             |         |

#### 13.4.80000 HS\_SCCH\_LESS\_STATUS

NOTE: For FDD only.

This variable indicates whether HS-SCCH less HS-DSCH transmission procedures are ongoing. See subclause 8.5.35 for actions related to the setting of this variable.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   | Version |
|--------------------------------|------|-------|--------------------|---|---------|
| HS_SCCH_LESS_STATUS            | MP   |       | Boolean            | TRUE: HS-SCCH less HS-DSCH transmission is ongoing. Set to FALSE when entering UTRA RRC connected mode when not otherwise stated in the procedure. Set to FALSE when leaving UTRA RRC connected mode. | REL-7   |

#### 13.4.8a INCOMPATIBLE\_SECURITY\_RECONFIGURATION

This variable indicates whether an incompatible simultaneous reconfiguration of a security function has been received.

| Information Element/Group name        | Need | Multi | Type and reference | Semantics description   |
|---------------------------------------|------|-------|--------------------|---|
| Incompatible security reconfiguration | MP   |       | Boolean            | TRUE: An incompatible simultaneous security reconfiguration has been detected. Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode. |

13.4.8b Void

13.4.8c Void

#### 13.4.9 INITIAL\_UE\_IDENTITY

In this variable the identity used by the UE when establishing an RRC connection is stored.

| Information Element/Group | Need | Multi | Type and            | Semantics description                         |
|---------------------------|------|-------|---------------------|---|
| name                      |      |       | reference           |   |
| Initial UE identity       | OP   |       | Initial UE identity | Cleared when leaving UTRA RRC connected mode. |
|                           |      |       | 10.3.3.15           |   |

#### 13.4.9a INTEGRITY\_PROTECTION\_ACTIVATION\_INFO

This variable contains information to be sent to UTRAN about when a new integrity protection configuration shall be activated in the uplink for signalling radio bearers in case of modification of integrity protection.

| Information Element/Group                   | Need | Multi | Type and   | Semantics description   |
|---|------|-------|--|---|
| name  |      |       | reference  |   |
| Uplink Integrity protection activation info | OP   |       | Integrity<br>protection<br>activation<br>info<br>10.3.3.17 | Cleared when entering UTRA<br>RRC connected mode.<br>Cleared when leaving UTRA<br>RRC connected mode. |

#### 13.4.10 INTEGRITY\_PROTECTION\_INFO

This variable contains information about the current status of the integrity protection in the UE.

| Information Element/Group name                                    | Need | Multi                                     | Type and reference                      | Semantics description   |
|---|------|---|---|---|
| Status  | MP   |   | Enumerated(<br>Not started,<br>Started) | Set to "Not started" when entering UTRA RRC connected mode. Set to "Not started" when leaving UTRA RRC connected mode.  |
| Reconfiguration   | MP   |   | Boolean                                 | TRUE means a reconfiguration of integrity protection is ongoing. Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode.           |
| Signalling radio bearer specific integrity protection information | OP   | 1 to<br><maxsrbs<br>etup&gt;</maxsrbs<br> |   | When integrity protection is started, status information for RB0- RB4 in that order. Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode. |
| >Uplink RRC HFN   | MP   |   | Bit string<br>(28)                      |   |
| >Downlink RRC HFN   | MP   |   | Bit string<br>(28)                      |   |
| >Uplink RRC Message sequence number                               | MP   |   | Integer (0<br>15)                       |   |
| >Downlink RRC Message sequence number                             | OP   |   | Integer (0<br>15)                       |   |

#### 13.4.10a INTER\_RAT\_HANDOVER\_INFO\_TRANSFERRED

This variable stores information about the inter RAT handover info that has been transferred to another RAT.

| Information<br>Element/Group name                      | Need | Multi  | Type<br>and<br>referenc  | Semantics description                               | Version |
|--|------|--|--|---|---------|
| Predefined configuration status information            | OP   |  | Predefin ed configura tion status informati on 10.3.4.5                  | Cleared upon entering connected mode in another RAT |         |
| Predefined configuration status information compressed | OP   |  | Predefin ed configura tion status informati on compres sed 10.3.4.5 b    | Cleared upon entering connected mode in another RAT | REL-5   |
| UE security information                                | OP   |  | UE<br>security<br>informati<br>on<br>10.3.3.4<br>2b                      | Cleared upon entering connected mode in another RAT |         |
| UE security information2                               | OP   |  | UE<br>security<br>informati<br>on2<br>10.3.3.4<br>2c                     | Cleared upon entering connected mode in another RAT | REL-6   |
| UE radio access capability                             | OP   |  | UE radio<br>access<br>capabilit<br>y<br>10.3.3.4                         | Cleared upon entering connected mode in another RAT |         |
| UE radio access capability extension                   | OP   |  |  | Cleared upon entering connected mode in another RAT |         |
| UE radio access capability compressed                  | OP   |  | UE radio<br>access<br>capabilit<br>y<br>compres<br>sed<br>10.3.3.4<br>20 |   | REL-5   |
| UE system specific capability                          | OP   | 1 to<br><maxsyst<br>emCapab<br/>ility&gt;</maxsyst<br> | Inter-<br>RAT UE<br>radio<br>access<br>capabilit<br>y<br>10.3.8.7        | Cleared upon entering connected mode in another RAT |         |
| >Inter-RAT UE radio access capability                  | MP   |  | Inter-<br>RAT UE<br>radio  |   |         |

|  | access<br>capabilit |  |
|--|---------------------|--|
|  | y<br>10.3.8.7       |  |

#### 13.4.11 INVALID\_CONFIGURATION

This variable indicates whether a received message contained an invalid configuration, by means of invalid values or invalid combinations of information elements.

| Information Element/Group | Need | Multi | Type and  | Semantics description   |
|---------------------------|------|-------|-----------|---|
| name                      |      |       | reference |   |
| Invalid configuration     | MP   |       | Boolean   | TRUE: An invalid configuration has been detected. Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving |
|                           |      |       |           | UTRA RRC connected mode.  |

#### 13.4.11a LATEST\_CONFIGURED\_CN\_DOMAIN

This variable stores the CN-domain that was most recently configured to be used for ciphering and integrity protection.

| Information Element/Group   | Need | Multi | Type and                    | Semantics description   |
|-----------------------------|------|-------|-----------------------------|---|
| name                        |      |       | reference                   |   |
| Latest configured CN domain | OP   |       | CN domain identity 10.3.1.1 | Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. Cleared when leaving UTRA RRC connected mode. |

#### 13.4.11b LATEST\_CONFIGURED\_SRB\_DELAY\_AND\_PC\_PREAMBLE

This variable stores the SRB delay and PC preamble to be used for establishing the DPCH after failure of hard handover, inter-RAT handover from UTRAN, or cell change order from UTRAN.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description   |
|--------------------------------|------|-------|--------------------|---|
| SRB delay                      | OP   |       | Integer (07)       | Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. |
| PC preamble                    | OP   |       | Integer (07)       | Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. |

#### 13.4.11c MBMS\_ACTIVATED\_SERVICES

This variable stores the MBMS multicast services the UE has joined as well as the MBMS broadcast services the UE is interested to receive. Whenever the list of joined multicast services and/ or interested broadcast services changes, upper layers provide an indication upon which the UE shall update the variable accordingly. In case upper layers de-select an MBMS Selected Services, the UE shall remove the concerned service from the variable. Likewise, when upper layers select an MBMS Selected Services, the UE shall add the concerned service to the variable.

| Information Element/Group name       | Need             | Multi  | Type and reference                       | Semantics description  |
|--------------------------------------|------------------|--|--|--|
| Activated service list               | OP               | 1 to<br><maxmbm<br>S-<br/>Services&gt;</maxmbm<br> |  |  |
| >Service Identity                    | MP               |  | MBMS<br>Service<br>identity<br>10.3.9a.8 |  |
| >Service type                        | MP               |  | Enumerated<br>(Multicast,<br>Broadcast)  |  |
| >MBMS Selected Services<br>Indicator | CV-<br>Broadcast |  | Boolean                                  | TRUE means that the service is currently a MBMS Selected Service |

| Condition | Explanation  |
|-----------|--|
| Broadcast | This IE is mandatory present if the IE "Service type" is |
|           | set to 'Broadcast' and not needed otherwise.             |

NOTE: An independent instance of the variable MBMS\_ACTIVATED\_SERVICES is used by UEs supporting reception of MBMS services from cells operating in MBSFN mode and will contain the services available in MBSFN mode only as indicated by higher layers.

## 13.4.11d MBMS\_PREV\_FREQUENCY\_INFO

This variable stores the frequency information of the cell the UE is camped on, upon moving to the MBMS preferred layer indicated MBMS FLC preferred frequency information.

| Information Element/Group  | Need | Multi | Type and  | Semantics   | Version |
|----------------------------|------|-------|-----------|-------------|---------|
| name                       |      |       | reference | description |         |
| PREV Frequency Information |      |       |           |             |         |
| CHOICE mode                |      |       |           |             |         |
| >FDD cell                  |      |       |           |             |         |
| >>UARFCN downlink (Nd)     | MP   |       | Integer(0 | [21]        |         |
|                            |      |       | 16383)    |             |         |
| >3.84 Mcps TDD cell        |      |       |           |             |         |
| >>UARFCN (Nt)              | MP   |       | Integer(0 | [22]        |         |
|                            |      |       | 16383)    |             |         |
| >1.28 Mcps TDD cell list   |      |       |           |             |         |
| >>UARFCN (Nt)              | MP   |       | Integer(0 | [22]        |         |
|                            |      |       | 16383)    |             |         |

#### 13.4.11e MBMS\_PL\_SERVICE\_RESTRICTION\_INFO\_DEDICATED

This variable stores the value of the IE "MBMS PL Service Restriction Information" restriction applicable to preferred frequency received in the latest Radio Bearer Control or Cell Update Confirm message.

| Information Element/Group                      | Need | Multi | Type and                       | Semantics  | Version |
|--|------|-------|--------------------------------|--|---------|
| name   |      |       | reference                      | description  |         |
| MBMS_PL_SERVICE_RESTRI<br>CTION_INFO_DEDICATED | MP   |       | Enumerated(<br>TRUE,<br>FALSE) | Set to FALSE<br>when entering<br>UTRA connected<br>mode. | REL-6   |

#### 13.4.12 MEASUREMENT\_IDENTITY

This variable stores the measurements configured in the UE. For each configured measurement, the information below shall be stored.

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description   |
|--------------------------------|------|-------|---|---|
| MEASUREMENT CONTROL            | OP   |       | MEASUREM<br>ENT<br>CONTROL<br>10.2.17,<br>System<br>Information<br>Block type<br>11<br>10.2.48.8.12,<br>System<br>Information<br>Block type<br>12<br>10.2.48.8.13 | Information as contained in these messages. Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure (8.4.1.8-8.4.1.9). Cleared when leaving UTRA RRC connected mode when not stated otherwise in the procedure (8.4.1.9a). |

#### 13.4.13 Void

## 13.4.13a MIMO\_PARAMS

This variable indicates the values of the parameters for operation in MIMO mode. See subclause 8.5.xx for actions related to the setting of this variable.

| Information Element/Group name   | Need | Multi | Type and reference   | Semantics description                                    | Version |
|----------------------------------|------|-------|--|--|---------|
| MIMO N_cqi_typeA/M_cqi ratio     | OP   |       | Enumerated(<br>1/2, 2/3, 3/4,<br>4/5, 5/6, 6/7,<br>7/8, 8/9,<br>9/10, 1/1) |  |         |
| MIMO pilot configuration         | OP   |       | MIMO pilot configuration 10.3.6.41b  |  |         |
| Precoding weight set restriction | OP   |       | Enumerated<br>(TRUE)   | If present, UE applies precoding weight set restriction. | REL-7   |

#### 13.4.13b MIMO\_STATUS

This variable indicates whether the UE is operating in MIMO mode. See subclause 8.5.ww for actions related to the setting of this variable.

| Information Element/Group | Need | Multi | Type and  | Semantics            | Version |
|---------------------------|------|-------|-----------|----------------------|---------|
| name                      |      |       | reference | description          |         |
| MIMO status               | MP   |       | Boolean   | TRUE means the       |         |
|                           |      |       |           | UE is operating in   |         |
|                           |      |       |           | MIMO mode.           |         |
|                           |      |       |           | Cleared when leaving |         |
|                           |      |       |           | CELL_DCH state.      |         |

#### 13.4.14 ORDERED\_RECONFIGURATION

This variable stores information about an ongoing Reconfiguration procedure.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| Ordered reconfiguration        | МР   |       | Boolean            | TRUE means that a Reconfiguration procedure is ongoing. Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode. |

#### 13.4.14a PDCP\_ROHC\_TARGET\_MODE

This variable contains the ROHC target mode.

| Information Element/Group name | Need | Multi | Type and reference                 | Semantics description  | Version |
|--------------------------------|------|-------|------------------------------------|--|---------|
| Target Mode                    | OP   |       | Enumerated<br>(O-mode, R-<br>mode) | The UE shall only transit to the signalled mode for operation of ROHC as decribed in [36]. | REL-5   |

#### 13.4.15 PDCP\_SN\_INFO

This variable contains PDCP receive sequence numbers for one or several radio bearers to be included in a response message to UTRAN.

| Information Element/Group     | Need | Multi                                       | Type and                                    | Semantics description   |
|-------------------------------|------|---|---|---|
| name                          |      |   | reference                                   |   |
| RB with PDCP information list | OP   | 1 to<br><maxrball<br>RABs&gt;</maxrball<br> |   | Cleared when entering UTRA<br>RRC connected mode.<br>Cleared when leaving UTRA<br>RRC connected mode. |
| >RB with PDCP information     | MP   |   | RB with<br>PDCP<br>information<br>10.3.4.22 |   |

#### 13.4.15a PHYSICAL\_SHARED\_CHANNEL\_CONFIGURATION

This variable is used only for TDD to store information about the physical shared channel configuration in the UE.

| Information Element/Group name | Need | Multi         | Type and reference                          | Semantics description  |
|--------------------------------|------|---------------|---|--|
| PUSCH configuration            | OP   |               |   | Cleared when entering and leaving UTRA RRC connected mode.   |
| >PUSCH info                    | MP   |               | PUSCH info<br>10.3.6.63                     |  |
| >PUSCH Identity                | OP   |               | Integer(1<br>hiPUSCHide<br>ntities)         |  |
| >PUSCH power control info      | OP   |               | PUSCH<br>power<br>control info<br>10.3.6.65 |  |
| PDSCH configuration            | OP   |               |   | Cleared when entering and leaving UTRA RRC connected mode.   |
| >PDSCH Info                    | MP   |               | PDSCH Info<br>10.3.6.44                     |  |
| >PDSCH Identity                | OP   |               | Integer(1hi<br>PDSCHident<br>ities)         |  |
| >PDSCH power control info      | OP   |               | PDSCH<br>power<br>control info<br>10.3.6.45 |  |
| ISCP Timeslot list             | OP   | 1 to<br>maxTS |   | Cleared when entering and leaving UTRA RRC connected mode.   |
| >Timeslot number               | MP   |               | Timeslot<br>number<br>10.3.6.84             | Timeslot numbers, for which<br>the UE shall report the timeslot<br>ISCP in PUSCH CAPACITY<br>REQUEST message |

#### 13.4.16 PROTOCOL\_ERROR\_INDICATOR

This variable indicates whether there exist a protocol error that is to be reported to UTRAN.

| Information Element/Group name | Need | Multi | Type and reference                          | Semantics description  |
|--------------------------------|------|-------|---|--|
| Protocol error indicator       | MP   |       | Protocol<br>error<br>indicator<br>10.3.3.27 | Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode. |

#### 13.4.17 PROTOCOL\_ERROR\_INFORMATION

This variable contains diagnostics to be reported to UTRAN for a message that was not completely understood.

| Information Element/Group  | Need | Multi | Type and    | Semantics description      |
|----------------------------|------|-------|-------------|----------------------------|
| name                       |      |       | reference   |                            |
| Protocol error information | OP   |       | Protocol    | Cleared when entering UTRA |
|                            |      |       | error       | RRC connected mode.        |
|                            |      |       | information | Cleared when leaving UTRA  |
|                            |      |       | 10.3.8.12   | RRC connected mode.        |

#### 13.4.18 PROTOCOL\_ERROR\_REJECT

This variable indicates whether there has occurred a severe protocol error causing the ongoing procedure to fail.

| Information Element/Group | Need | Multi | Type and  | Semantics description  |
|---------------------------|------|-------|-----------|--|
| name                      |      |       | reference |  |
| Protocol error reject     | MP   |       | Boolean   | TRUE: a severe protocol error has occurred. Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode. |

#### 13.4.19 RB\_TIMER\_INDICATOR

This variable contains information to be sent to UTRAN if any of the timers T314 or T315 has expired when the UE sends a cell update with cause RL failure.

| Information Element/Group name | Need | Multi | Type and reference           | Semantics description   |
|--------------------------------|------|-------|------------------------------|---|
| RB timer indicator             | OP   |       | RB timer indicator 10.3.3.28 | Cleared when entering UTRA<br>RRC connected mode.<br>Cleared when leaving UTRA<br>RRC connected mode. |

#### 13.4.20 RB\_UPLINK\_CIPHERING\_ACTIVATION\_TIME\_INFO

This variable contains information to be sent to UTRAN about when a new ciphering configuration shall be activated in the uplink for radio bearers using RLC-AM or RLC-UM.

| Information Element/Group name           | Need | Multi | Type and reference                         | Semantics description   |
|--|------|-------|--|---|
| RB uplink ciphering activation time info | OP   |       | RB<br>activation<br>time info<br>10.3.4.13 | Cleared when entering UTRA<br>RRC connected mode.<br>Cleared when leaving UTRA<br>RRC connected mode. |

#### 13.4.200 RNC\_CAPABILITY\_CHANGE\_SUPPORT

This variable indicates whether the serving RNC supports changes of UE capability in connected mode.

| Information Element/Group name          | Need | Multi | Type and reference | Semantics description                         |
|---|------|-------|--------------------|---|
| RNC support for change of UE capability | MP   |       | Boolean            | Cleared when leaving UTRA RRC connected mode. |

#### 13.4.20a SECURITY\_MODIFICATION

This variable contains information on which CN domain is affected by the ongoing security reconfiguration.

| Information Element/Group name | Need | Multi                      | Type and reference                        | Semantics description |
|--------------------------------|------|----------------------------|---|-----------------------|
| Status for each CN domain      | MP   | <1 to<br>maxCNDo<br>mains> |   |                       |
| >CN domain identity            | MP   |                            | CN domain identity 10.3.1.1               |                       |
| >Status                        | MP   |                            | Enumerated(<br>Affected, Not<br>Affected) |                       |

#### 13.4.21 Void

## 13.4.22 START\_THRESHOLD

This variable contains information about the maximum allowed value of the START for a CN domain.

| Information Element/Group name | Need | Multi | Type and reference    | Semantics description  |
|--------------------------------|------|-------|-----------------------|--|
| THRESHOLD                      | OP   |       | Integer<br>(01048576) | 20 bits. Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. Cleared when leaving UTRA RRC connected mode. |

## 13.4.23 START\_VALUE\_TO\_TRANSMIT

This variable contains the value of START for new radio bearer(s) to be transmitted in a response message.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| START                          | OP   |       | START<br>10.3.3.38 | Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode. |

## 13.4.24 TFC\_SUBSET

This variable contains information about the TFC subset(s) applicable to the UE.

| Information Element/Group name | Need | Multi | Type and reference   | Semantics description  | Version |
|--------------------------------|------|-------|--|--|---------|
| CHOICE mode                    | MP   |       |  |  |         |
| >FDD                           |      |       |  |  |         |
| >>Current TFC subset           | MP   |       | Transport<br>Format<br>Combinati<br>on Subset<br>10.3.5.22 | Set to "Full transport<br>format set" when<br>entering UTRA RRC<br>connected mode when<br>not stated otherwise in<br>the procedure.                                  |         |
| >>Duration                     | OP   |       | TFC<br>Control<br>duration<br>10.3.6.80                    | Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.   |         |
| >>Default TFC subset           | OP   |       | Transport<br>Format<br>Combinati<br>on Subset<br>10.3.5.22 | The TFC subset to go back to when any temporary limitation is released. Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode. |         |

| Information<br>Element/Group name | Need | Multi                                  | Type and reference  | Semantics description  | Version |
|-----------------------------------|------|--|---|--|---------|
| >>TFC subset list                 | MP   | 1 to<br><maxtf<br>Csub&gt;</maxtf<br>  |   |  | REL-4   |
| >>>TFC subset                     | MP   | OSUB                                   | Transport<br>Format<br>Combinati<br>on Subset<br>10.3.5.22          |  | REL-4   |
| >>TFCS list                       | MP   | 1 to <<br>maxCCT<br>rCH >              |   | One TFCS is created when entering UTRA RRC connected mode when not stated otherwise in the procedure.  |         |
| >>>TFCS identity                  | MP   |  | Transport<br>Format<br>Combinati<br>on Set<br>Identity<br>10.3.5.21 | "TFCS ID" is set to 1 when entering UTRA RRC connected mode when not stated otherwise in the procedure. "Shared channel indicator" is set to FALSE when entering UTRA RRC connected mode when not stated otherwise in the procedure. |         |
| >>>Current TFC subset             | MP   |  | Transport<br>Format<br>Combinati<br>on Subset<br>10.3.5.22          | Set to "Full transport format set" when entering UTRA RRC connected mode when not stated otherwise in the procedure.   |         |
| >>>>Duration                      | OP   |  | TFC<br>Control<br>duration<br>10.3.6.80                             | Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.   |         |
| >>>>Default TFC subset            | OP   |  | Transport<br>Format<br>Combinati<br>on Subset<br>10.3.5.22          | The TFC subset to go back to when any temporary limitation is released. Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode.   |         |
| >>TFC subset list                 | MP   | 1 to<br><maxtf<br>Csub2&gt;</maxtf<br> |   |  | REL-4   |
| >>>TFCS identity                  | MP   |  | Transport<br>Format<br>Combinati<br>on Set<br>Identity<br>10.3.5.21 |  | REL-4   |
| >>>TFC subset                     | MP   |  | Transport<br>Format<br>Combinati<br>on Subset<br>10.3.5.22          |  | REL-4   |

## 13.4.25 TGPS\_IDENTITY

This variable contains the configuration parameters of all the configured compressed mode transmission gap pattern sequences.

| Information Element/Group name                                    | Need      | Multi                                | Type and reference                      | Semantics description  |
|---|-----------|--------------------------------------|---|--|
| Transmission gap pattern sequence                                 | OP        | 1 to<br><maxtgp<br>S&gt;</maxtgp<br> |   | Cleared when entering UTRA<br>RRC connected mode.<br>Cleared when leaving UTRA<br>RRC connected mode.  |
| >TGPSI  | MP        |                                      | TGPSI<br>10.3.6.82                      |  |
| >TGPS Status Flag   | MP        |                                      | Enumerated(<br>activate,<br>deactivate) | This flag indicates whether the Transmission Gap Pattern Sequence shall be activated or deactivated.   |
| > Current TGPS Status Flag  | MP        |                                      | Enumerated(<br>active,<br>inactive)     | This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it is active or inactive                                  |
| >TGCFN  | CV-Active |                                      | Integer<br>(0255)                       | Connection Frame Number of the first frame of the first pattern within the Transmission Gap Pattern Sequence.                                      |
| >Transmission gap pattern<br>sequence configuration<br>parameters | MP        |                                      |   | Information as contained in the IE group "Transmission gap pattern sequence configuration parameters" in IE "DPCH compressed mode info" 10.3.6.33. |

| Condition | Explanation   |
|-----------|---|
| Active    | This IE is mandatory present when the value of the IE "TGPS Status Flag" is "Activate" and not needed |
|           | otherwise.  |

#### 13.4.26 TGSN\_REPORTED

This variable specifies whether an IE "Proposed TGSN" was reported to the UTRAN

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| Proposed TGSN reported         | MP   |       | Boolean            | Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode. |

## 13.4.26a TIMERS\_AND\_CONSTANTS

This variable contains the values for all timers and constants used in connected mode.

| Information Element/Group                 | Need | Multi | Type and   | Semantics description  |
|---|------|-------|--|--|
| name                                      |      |       | reference  |  |
| UE Timers and constants in connected mode | MD   |       | UE Timers<br>and<br>constants in<br>connected<br>mode<br>10.3.3.43 | Default value means that for all timers and constants  - for parameters with need MD, the defaults specified in 10.3.3.43 apply and  - for parameters with need OP, the parameters are absent.  All parameters are set to the default value when leaving UTRA RRC connected mode to another RAT. |

#### 13.4.27 TRANSACTIONS

This variable stores the identifications of the ongoing RRC procedure transactions.

| Information Element/Group   | Need | Multi  | Type and    | Semantics description     |
|-----------------------------|------|--|-------------|---------------------------|
| name                        |      |  | reference   |                           |
| Accepted transactions       | OP   | 1 to   |             | Cleared when leaving UTRA |
|                             |      | <maxtrans< td=""><td></td><td>RRC connected mode.</td></maxtrans<> |             | RRC connected mode.       |
|                             |      | actions>   |             |                           |
| >Message type               | MP   |  | Message     |                           |
|                             |      |  | Type        |                           |
| >RRC transaction identifier | MP   |  | RRC         |                           |
|                             |      |  | transaction |                           |
|                             |      |  | identifier  |                           |
|                             |      |  | 10.3.3.36   |                           |
| Rejected transactions       | OP   | 1 to   |             | Cleared when leaving UTRA |
|                             |      | <maxtrans< td=""><td></td><td>RRC connected mode.</td></maxtrans<> |             | RRC connected mode.       |
|                             |      | actions>   |             |                           |
| >Message type               | MP   |  | Message     |                           |
|                             |      |  | Type        |                           |
| >RRC transaction identifier | MP   |  | RRC         |                           |
|                             |      |  | transaction |                           |
|                             |      |  | identifier  |                           |
|                             |      |  | 10.3.3.36   |                           |

## 13.4.270 TRIGGERED\_MEASUREMENT\_REPORT

This variable indicates that the measurement procedure has to be started to notify UTRAN that the UE has entered CELL\_FACH after detecting the value of its variable H\_RNTI in the HS-SCCH reception procedure while being in CELL\_PCH state, as specified in subclause 8.5.40.

NOTE: For FDD only.

| Information Element/Group    | Need | Multi | Type and  | Semantics   | Version |
|------------------------------|------|-------|-----------|---|---------|
| name                         |      |       | reference | description   |         |
| Triggered measurement report | MP   |       | Boolean   | Set to FALSE<br>when entering<br>CELL_PCH and<br>URA_PCH. | REL-7   |

## 13.4.27a TRIGGERED\_1A\_EVENT

This variable contains information about a 1a event that has been triggered in the UE. There is one such variable per 1a event configured in the UE.

| Information Element/Group name | Need | Multi                      | Type and reference                 | Semantics description   |
|--------------------------------|------|----------------------------|------------------------------------|---|
| Cells triggered                | OP   | 1 to <<br>maxCellMe<br>as> |                                    | Cleared when entering UTRA<br>RRC connected mode.<br>Cleared when leaving UTRA<br>RRC connected mode. |
| >primary CPICH                 | MP   |                            | Primary<br>CPICH info<br>10.3.6.60 |   |
| >sent reports                  | MP   |                            | Integer(1Inf inity)                | Number of reports sent to<br>UTRAN in case of event<br>triggered periodical reporting                 |
| Cells recently triggered       | OP   | 1 to <<br>maxCellMe<br>as> |                                    |   |
| >primary CPICH                 | MP   |                            | Primary<br>CPICH info<br>10.3.6.60 |   |
| >sent reports                  | MP   |                            | Integer(1Inf inity)                | Number of reports sent to<br>UTRAN in case of event<br>triggered periodical reporting                 |
| Periodical reporting running   | MP   |                            | Boolean                            |   |

## 13.4.27b TRIGGERED\_1B\_EVENT

This variable contains information about a 1b event that has been triggered in the UE. There is one such variable per 1b event configured in the UE.

| Information<br>Element/Group name | Need | Multi                      | Type and reference                    | Semantics description  | Version |
|-----------------------------------|------|----------------------------|---------------------------------------|--|---------|
| Cells triggered                   | OP   | 1 to <<br>maxCell<br>Meas> |                                       | Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode. |         |
| >primary CPICH                    | MP   |                            | Primary<br>CPICH<br>info<br>10.3.6.60 |  |         |
| >sent reports                     | MP   |                            | Integer(1<br>Infinity)                | Number of reports sent<br>to UTRAN in case of<br>event triggered<br>periodical reporting     | REL-5   |
| Cells recently triggered          | OP   | 1 to <<br>maxCell<br>Meas> |                                       |  | REL-5   |
| >primary CPICH                    | MP   |                            | Primary<br>CPICH<br>info<br>10.3.6.60 |  | REL-5   |
| >sent reports                     | MP   |                            | Integer(1<br>Infinity)                | Number of reports sent<br>to UTRAN in case of<br>event triggered<br>periodical reporting.    | REL-5   |
| Periodical reporting running      | MP   |                            | Boolean                               |  | REL-5   |

## 13.4.27c TRIGGERED\_1C\_EVENT

This variable contains information about a 1c event that has been triggered in the UE. There is one such variable per 1c event configured in the UE.

| Information Element/Group name | Need | Multi                      | Type and reference                 | Semantics description   |
|--------------------------------|------|----------------------------|------------------------------------|---|
| Cells triggered                | OP   | 1 to <<br>maxCellMe<br>as> |                                    | Cleared when entering UTRA<br>RRC connected mode.<br>Cleared when leaving UTRA<br>RRC connected mode. |
| >primary CPICH                 | MP   |                            | Primary<br>CPICH info<br>10.3.6.60 |   |
| >sent reports                  | MP   |                            | Integer(1Inf inity)                | Number of reports sent to<br>UTRAN in case of event<br>triggered periodical reporting                 |
| Cells recently triggered       | OP   | 1 to <<br>maxCellMe<br>as> |                                    |   |
| >primary CPICH                 | MP   |                            | Primary<br>CPICH info<br>10.3.6.60 |   |
| >sent reports                  | MP   |                            | Integer(1Inf inity)                | Number of reports sent to<br>UTRAN in case of event<br>triggered periodical reporting                 |
| Periodical reporting running   | MP   |                            | Boolean                            |   |

## 13.4.27dBEST\_CELL\_1D\_EVENT

This variable contains information about a 1d event that has been triggered in the UE. There is one such variable per 1d event configured in the UE.

| Information Element/Group name | Need | Multi | Type and reference                 | Semantics description   |
|--------------------------------|------|-------|------------------------------------|---|
| Best cell                      | OP   |       | Primary<br>CPICH info<br>10.3.6.60 | Cleared when entering UTRA<br>RRC connected mode.<br>Cleared when leaving UTRA<br>RRC connected mode. |

# 13.4.27e TRIGGERED\_1E\_EVENT

This variable contains information about a 1e event that has been triggered in the UE. There is one such variable per 1e event configured in the UE.

| Information Element/Group name | Need | Multi                      | Type and reference                 | Semantics description  |
|--------------------------------|------|----------------------------|------------------------------------|--|
| Cells triggered                | OP   | 1 to <<br>maxCellMe<br>as> |                                    | Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode. |
| >primary CPICH                 | MP   |                            | Primary<br>CPICH info<br>10.3.6.60 |  |
| Cells recently triggered       | OP   | 1 to <<br>maxCellMe<br>as> |                                    |  |
| >primary CPICH                 | MP   |                            | Primary<br>CPICH info<br>10.3.6.60 |  |

## 13.4.27f TRIGGERED\_1F\_EVENT

This variable contains information about a 1f event that has been triggered in the UE. There is one such variable per 1f event configured in the UE.

| Information Element/Group name | Need | Multi                      | Type and reference                 | Semantics description   |
|--------------------------------|------|----------------------------|------------------------------------|---|
| Cells triggered                | OP   | 1 to <<br>maxCellMe<br>as> |                                    | Cleared when entering UTRA<br>RRC connected mode.<br>Cleared when leaving UTRA<br>RRC connected mode. |
| >primary CPICH                 | MP   |                            | Primary<br>CPICH info<br>10.3.6.60 |   |
| Cells recently triggered       | OP   | 1 to <<br>maxCellMe<br>as> |                                    |   |
| >primary CPICH                 | MP   |                            | Primary<br>CPICH info<br>10.3.6.60 |   |

#### 13.4.27f1 TRIGGERED\_1G\_EVENT

This variable contains information about a 1g event that has been triggered in the UE.

| Information Element/Group name | Need | Multi                      | Type and reference                 | Semantics description |
|--------------------------------|------|----------------------------|------------------------------------|-----------------------|
| Cells triggered                | OP   | 1 to <<br>maxCellMe<br>as> |                                    |                       |
| >Primary CCPCH info            | MP   |                            | Primary<br>CCPCH info<br>10.3.6.57 |                       |

## 13.4.27f2 TRIGGERED\_1H\_EVENT

This variable contains information about a 1h event that has been triggered in the UE.

| Information Element/Group name | Need | Multi                      | Type and reference                 | Semantics description |
|--------------------------------|------|----------------------------|------------------------------------|-----------------------|
| Cells triggered                | OP   | 1 to <<br>maxCellMe<br>as> |                                    |                       |
| >Primary CCPCH info            | MP   |                            | Primary<br>CCPCH info<br>10.3.6.57 |                       |

## 13.4.27f3 TRIGGERED\_1I\_EVENT

This variable contains information about a 1i event that has been triggered in the UE.

| Information Element/Group name | Need | Multi                      | Type and reference                 | Semantics description |
|--------------------------------|------|----------------------------|------------------------------------|-----------------------|
| Cells triggered                | OP   | 1 to <<br>maxCellMe<br>as> |                                    |                       |
| >Primary CCPCH info            | MP   |                            | Primary<br>CCPCH info<br>10.3.6.57 |                       |

#### 13.4.27f4 BEST\_FREQUENCY\_2A\_EVENT

This variable contains information about a 2a event that has been configured in the UE. There is one such variable per 2a event configured in the UE.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Best frequency                 | MP   |       | Frequency          |                       |
| ·                              |      |       | info               |                       |
|                                |      |       | 10.3.6.36          |                       |

#### 13.4.27f5 TRIGGERED\_2B\_EVENT

This variable contains information about a 2b event that has been configured in the UE. There is one such variable per 2b event configured in the UE.

| Information Element/Group name | Need | Multi                          | Type and reference | Semantics description |
|--------------------------------|------|--------------------------------|--------------------|-----------------------|
| Frequency triggered            | OP   | 1 to < maxCellMe as>           |                    |                       |
| >Frequency                     | MP   | Frequency<br>info<br>10.3.6.36 |                    |                       |

## 13.4.27f6 TRIGGERED\_2C\_EVENT

This variable contains information about a 2c event that has been configured in the UE. There is one such variable per 2c event configured in the UE.

| Information Element/Group name | Need | Multi                          | Type and reference | Semantics description |
|--------------------------------|------|--------------------------------|--------------------|-----------------------|
| Frequency triggered            | OP   | 1 to < maxCellMe as>           |                    |                       |
| >Frequency                     | MP   | Frequency<br>info<br>10.3.6.36 |                    |                       |

#### 13.4.27f7 TRIGGERED\_2D\_EVENT

This variable contains information about a 2d event that has been configured in the UE. There is one such variable per 2d event configured in the UE.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Event triggered                | OP   |       | Boolean            |                       |

## 13.4.27f8 TRIGGERED\_2E\_EVENT

This variable contains information about a 2e event that has been configured in the UE. There is one such variable per 2e event configured in the UE.

| Information Element/Group name | Need | Multi                          | Type and reference | Semantics description |
|--------------------------------|------|--------------------------------|--------------------|-----------------------|
| Frequency triggered            | OP   | 1 to <<br>maxCellMe<br>as>     |                    |                       |
| >Frequency                     | MP   | Frequency<br>info<br>10.3.6.36 |                    |                       |

## 13.4.27f9 TRIGGERED\_2F\_EVENT

This variable contains information about a 2f event that have been configured in the UE. There is one such variable per 2f event configured in the UE.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Event triggered                | OP   |       | Boolean            |                       |

## 13.4.27f10 TRIGGERED\_3A\_EVENT

This variable contains information about a 3a event that has been configured in the UE. There is one such variable per event 3a configured in the UE.

| Information Element/Group | Need | Multi                                      | Type and                          | Semantics description |
|---------------------------|------|--|-----------------------------------|-----------------------|
| name                      |      |  | reference                         |                       |
| CHOICE system             | OP   |  |                                   |                       |
| >GSM                      |      |  |                                   |                       |
| >>CHOICE BSIC             | MP   |  |                                   |                       |
| >>>Verified BSIC          |      | 0 to<br><maxcellm<br>eas&gt;</maxcellm<br> |                                   |                       |
| >>>Inter-RAT cell id      | MP   |  | Integer(0<<br>maxCellMea<br>s>-1) |                       |
| >>>Non verified BSIC      |      | 0 to<br><maxcellm<br>eas&gt;</maxcellm<br> |                                   |                       |
| >>>BCCH ARFCN             | MP   |  | Integer<br>(01023)                |                       |

## 13.4.27f11 TRIGGERED\_3B\_EVENT

This variable contains information about a 3b event that has been configured in the UE. There is one such variable per event 3b configured in the UE.

| Information Element/Group name | Need | Multi                                      | Type and reference                | Semantics description |
|--------------------------------|------|--|-----------------------------------|-----------------------|
| CHOICE system                  | OP   |  | 1010101100                        |                       |
| >GSM                           |      |  |                                   |                       |
| >>CHOICE BSIC                  | MP   |  |                                   |                       |
| >>>Verified BSIC               |      | 0 to<br><maxcellm<br>eas&gt;</maxcellm<br> |                                   |                       |
| >>>Inter-RAT cell id           | MP   |  | Integer(0<<br>maxCellMea<br>s>-1) |                       |
| >>>Non verified BSIC           |      | 0 to<br><maxcellm<br>eas&gt;</maxcellm<br> | ,                                 |                       |
| >>>BCCH ARFCN                  | MP   |  | Integer<br>(01023)                |                       |

# 13.4.27f12 TRIGGERED\_3C\_EVENT

This variable contains information about a 3c event that has been configured in the UE. There is one such variable per event 3c configured in the UE.

| Information Element/Group | Need | Multi   | Type and                          | Semantics description |
|---------------------------|------|---|-----------------------------------|-----------------------|
| name                      |      |   | reference                         |                       |
| CHOICE system             | OP   |   |                                   |                       |
| >GSM                      |      |   |                                   |                       |
| >>CHOICE BSIC             | MP   |   |                                   |                       |
| >>>Verified BSIC          |      | 0 to  |                                   |                       |
|                           |      | <maxcellm< td=""><td></td><td></td></maxcellm<> |                                   |                       |
|                           |      | eas>  |                                   |                       |
| >>>>Inter-RAT cell id     | MP   |   | Integer(0<<br>maxCellMea<br>s>-1) |                       |
| >>>Non verified BSIC      |      | 0 to<br><maxcellm<br>eas&gt;</maxcellm<br>      |                                   |                       |
| >>>BCCH ARFCN             | MP   |   | Integer<br>(01023)                |                       |

## 13.4.27f13 BEST\_CELL\_3D\_EVENT

This variable contains information about a 3d event that has been configured in the UE. There is one such variable per event 3a configured in the UE.

| Information Element/Group name | Need | Multi | Type and reference                | Semantics description |
|--------------------------------|------|-------|-----------------------------------|-----------------------|
| CHOICE system                  |      |       |                                   |                       |
| >GSM                           |      |       |                                   |                       |
| >>CHOICE BSIC                  | MP   |       |                                   |                       |
| >>>Verified BSIC               |      |       |                                   |                       |
| >>>Inter-RAT cell id           | MP   |       | Integer(0<<br>maxCellMea<br>s>-1) |                       |
| >>>Non verified BSIC           |      |       |                                   |                       |
| >>>BCCH ARFCN                  | MP   |       | Integer<br>(01023)                |                       |

#### 13.4.27f14 TRIGGERED\_6A\_EVENT

This variable contains information about a 6a event that has been configured in the UE. There is one such variable per 6a event configured in the UE.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Event triggered                | OP   |       | Boolean            |                       |

#### 13.4.27f15 TRIGGERED\_6B\_EVENT

This variable contains information about a 6b event that has been configured in the UE. There is one such variable per 6b event configured in the UE.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Event triggered                | OP   |       | Boolean            | <u>-</u>              |

#### 13.4.27f16 TRIGGERED\_6C\_EVENT

This variable contains information about a 6c event that has been configured in the UE. There is one such variable per 6c event configured in the UE.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Event triggered                | OP   |       | Boolean            |                       |

## 13.4.27f17 TRIGGERED\_6D\_EVENT

This variable contains information about a 6d event that has been configured in the UE. There is one such variable per 6d event configured in the UE.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Event triggered                | OP   |       | Boolean            |                       |

## 13.4.27f18 TRIGGERED\_6E\_EVENT

This variable contains information about a 6e event that has been configured in the UE. There is one such variable per 6e event configured in the UE.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description |
|--------------------------------|------|-------|--------------------|-----------------------|
| Event triggered                | OP   |       | Boolean            |                       |

## 13.4.27f19 TRIGGERED\_6F\_EVENT

This variable contains information about a 6f event that has been configured in the UE. There is one such variable per 6f event configured in the UE.

| Information        | Need | Multi   | Type and  | Semantics description | Version |
|--------------------|------|---|-----------|-----------------------|---------|
| Element/Group name |      |   | reference |                       |         |
| CHOICE mode        |      |   |           |                       |         |
| >FDD               |      |   |           |                       |         |
| Event triggered_RL | OP   | <maxrl< td=""><td>Boolean</td><td></td><td></td></maxrl<> | Boolean   |                       |         |
|                    |      | >   |           |                       |         |
| >1.28 Mcps TDD     |      |   |           |                       | REL-4   |
| >>T <sub>ADV</sub> | MP   |   | TADV info |                       | REL-4   |
|                    |      |   | 10.3.7.11 |                       |         |
|                    |      |   | 2         |                       |         |

#### 13.4.27f20 TRIGGERED\_6G\_EVENT

This variable contains information about a 6g event that has been configured in the UE. There is one such variable per 6g event configured in the UE.

| Information Element/Group name | Need | Multi           | Type and reference | Semantics description |
|--------------------------------|------|-----------------|--------------------|-----------------------|
| Event triggered_RL             | OP   | <maxrl></maxrl> | Boolean            |                       |

## 13.4.27f21 TRIGGERED\_1J\_EVENT

This variable contains information about a 1j event that has been triggered in the UE. There is one such variable per 1j event configured in the UE.

| Information Element/Group name | Need | Multi                      | Type and reference                 | Semantics description  | Version |
|--------------------------------|------|----------------------------|------------------------------------|--|---------|
| Cells triggered                | OP   | 1 to < maxCellMe as>       |                                    | Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode. | REL-6   |
| >primary CPICH                 | MP   |                            | Primary<br>CPICH info<br>10.3.6.60 |  | REL-6   |
| >sent reports                  | MP   |                            | Integer(1Inf inity)                | Number of reports sent to<br>UTRAN in case of event<br>triggered periodical reporting        | REL-6   |
| Cells recently triggered       | OP   | 1 to <<br>maxCellMe<br>as> |                                    |  | REL-6   |
| >primary CPICH                 | MP   |                            | Primary<br>CPICH info<br>10.3.6.60 |  | REL-6   |
| >sent reports                  | MP   |                            | Integer(1Inf inity)                | Number of reports sent to UTRAN in case of event triggered periodical reporting              | REL-6   |
| Periodical reporting running   | MP   |                            | Boolean                            |  | REL-6   |

## 13.4.27g UE\_CAPABILITY\_REQUESTED

This variable stores information about the UE capabilities that have been requested by UTRAN but that have not yet been transferred to UTRAN.

| Information Element/Group name        | Need | Multi                         | Type and reference  | Semantics description  |
|---------------------------------------|------|-------------------------------|---|--|
| UE radio access capability            | OP   |                               | UE radio<br>access<br>capability<br>10.3.3.42               | Cleared when entering UTRA<br>RRC connected mode.<br>Cleared when leaving UTRA<br>RRC connected mode.                      |
| UE radio access capability extension  | OP   |                               | UE radio<br>access<br>capability<br>extension<br>10.3.3.42a | Cleared when entering UTRA<br>RRC connected mode.<br>Cleared when leaving UTRA<br>RRC connected mode.                      |
| UE system specific capability         | OP   | 1 to < maxInterSy sMessages > |   |  |
| >Inter-RAT UE radio access capability | MP   |                               | Inter-RAT<br>UE radio<br>access<br>capability<br>10.3.8.7   | Includes inter-RAT classmark. Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode. |

# 13.4.28 UE\_CAPABILITY\_TRANSFERRED

This variable stores information about which UE capabilities that have been transferred to UTRAN.

| Information Element/Group name        | Need | Multi   | Type and reference   | Semantics description   | Version |
|---------------------------------------|------|---|--|---|---------|
| UE radio access capability            | OP   |   | UE radio<br>access<br>capability<br>10.3.3.42                | Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. Cleared when leaving UTRA RRC connected mode.                               |         |
| UE radio access capability extension  | OP   |   | UE radio<br>access<br>capability<br>extension<br>10.3.3.42a  | Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. Cleared when leaving UTRA RRC connected mode.                               |         |
| UE system specific capability         | OP   | 1 to<br><maxsyste<br>mCapabilit<br/>y&gt;</maxsyste<br> |  |   |         |
| >Inter-RAT UE radio access capability | MP   |   | Inter-RAT<br>UE radio<br>access<br>capability<br>10.3.8.7    | Includes inter-RAT classmark. Cleared when entering UTRA RRC connected mode when not stated otherwise in the procedure. Cleared when leaving UTRA RRC connected mode. |         |
| UE radio access capability compressed | OP   |   | UE radio<br>access<br>capability<br>compressed<br>10.3.3.420 |   | REL-5   |
| Security capability                   | OP   |   | Security capability 10.3.3.37                                |   | REL-5   |

# 13.4.28aUE\_POSITIONING\_GPS\_DATA

| Information Element/Group name                    | Need | Multi  | Type and reference   | Semantics description                  |
|---|------|--|--|--|
| GPS Data ciphering info                           | OP   |  | UE<br>positioning<br>Ciphering<br>info<br>10.3.7.86                              |  |
| GPS Deciphering Keys                              | OP   |  | 10.5.7.00  |  |
| >Current deciphering key                          | MP   |  | Bit string(56)   |  |
| >Next deciphering key                             | MP   |  | Bit string(56)   |  |
| UE positioning GPS reference time                 | OP   |  | UE positioning GPS reference time 10.3.7.96                                      |  |
| UE positioning GPS reference UE position          | OP   |  | Ellipsoid<br>point with<br>altitude and<br>uncertainty<br>ellipsoid<br>10.3.8.4c | A priori knowledge of UE 3-D position. |
| UE positioning GPS DGPS corrections               | OP   |  | UE<br>positioning<br>GPS DGPS<br>corrections<br>10.3.7.91                        |  |
| UE positioning GPS navigation model               | OP   | 1 to<br><maxsat></maxsat>                                |  |  |
| >SatID  | MP   |  | Enumerated(<br>063)  | Satellite ID                           |
| >GPS Ephemeris and Clock<br>Correction parameters | MP   |  | UE positioning GPS Ephemeris and Clock Correction parameters 10.3.7.91a          |  |
| UE positioning GPS ionospheric model              | OP   |  | UE<br>positioning<br>GPS<br>ionospheric<br>model<br>10.3.7.92                    |  |
| UE positioning GPS UTC model                      | OP   |  | UE<br>positioning<br>GPS UTC<br>model<br>10.3.7.97                               |  |
| UE positioning GPS almanac                        | OP   |  |  |  |
| >SatID  | MP   | 1 to<br><maxsatal<br>manacStor<br/>age&gt;</maxsatal<br> |  |  |
| >>WN <sub>a</sub>                                 | MP   |  |  | Same as IE in 10.3.7.89                |
| >>DataID  | MP   |  |  | Same as IE in 10.3.7.89                |
| >>e   | MP   |  |  | Same as IE in 10.3.7.89                |
| >>t <sub>oa</sub>                                 | MP   |  |  | Same as IE in 10.3.7.89                |
| >>δl  | MP   |  |  | Same as IE in 10.3.7.89                |
| >>OMEGADOT  | MP   |  |  | Same as IE in 10.3.7.89                |
| >>SV Health                                       | MP   |  |  | Same as IE in 10.3.7.89                |
| >>A <sup>1/2</sup>                                | MP   |  |  | Same as IE in 10.3.7.89                |
| >>OMEGA <sub>0</sub>                              | MP   |  |  | Same as IE in 10.3.7.89                |
| >>M <sub>0</sub>                                  | MP   |  |  | Same as IE in 10.3.7.89                |

| Information Element/Group                 | Need | Multi | Type and  | Semantics description   |
|---|------|-------|---|-------------------------|
| name                                      |      |       | reference   |                         |
| >>ω                                       | MP   |       |   | Same as IE in 10.3.7.89 |
| >>af <sub>0</sub>                         | MP   |       |   | Same as IE in 10.3.7.89 |
| >>af <sub>1</sub>                         | MP   |       |   | Same as IE in 10.3.7.89 |
| >SV Global Health                         | OP   |       |   | Same as IE in 10.3.7.89 |
| UE positioning GPS acquisition assistance | OP   |       | UE positioning GPS acquisition assistance 10.3.7.88 |                         |
| UE positioning GPS real-time integrity    | OP   |       | UE positioning GPS real-time integrity 10.3.7.95    |                         |

# 13.4.28b UE\_POSITIONING\_OTDOA\_DATA\_UE\_ASSISTED

| Information Element/Group name                                   | Need | Multi                                      | Type and reference   | Semantics description |
|--|------|--|--|-----------------------|
| UE positioning OTDOA reference cell info for UE-assisted         | OP   |  | UE<br>positioning<br>OTDOA<br>reference<br>cell info<br>10.3.7.108 |                       |
| UE positioning OTDOA<br>neighbour cell list for UE-<br>assisted  | OP   | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |  |                       |
| >UE positioning OTDOA<br>neighbour cell info for UE-<br>assisted | MP   |  | UE<br>positioning<br>OTDOA<br>neighbour<br>cell info               |                       |

# 13.4.28c UE\_POSITIONING\_OTDOA\_DATA\_UE\_BASED

| Information Element/Group                                 | Need | Multi                                      | Type and  | Semantics description |
|---|------|--|---|-----------------------|
| name  |      |  | reference   | -                     |
| OTDOA Deciphering Keys                                    | OP   |  |   |                       |
| >Current deciphering key                                  | MP   |  | Bit string(56)  |                       |
| >Next deciphering key                                     | MP   |  | Bit string(56)  |                       |
| OTDOA Data ciphering info                                 | OP   |  | UE<br>positioning<br>Ciphering<br>info<br>10.3.7.86                                 |                       |
| UE positioning OTDOA reference cell info for UE-based     | OP   |  | UE<br>positioning<br>OTDOA<br>reference<br>cell info for<br>UE-based<br>10.3.7.108a |                       |
| UE positioning OTDOA neighbour cell list for UE-based     | OP   | 1 to<br><maxcellm<br>eas&gt;</maxcellm<br> |   |                       |
| >UE positioning OTDOA<br>neighbour cell info for UE-based | MP   |  | UE<br>positioning<br>OTDOA<br>neighbour<br>cell info for<br>UE-based<br>10.3.7.106  |                       |

# 13.4.28dUE\_POSITIONING\_GANSS\_DATA

| Information Element/Group name             | Need | Multi | Type and reference   | Semantics description                  | V     |
|--|------|-------|--|--|-------|
| GANSS Data ciphering info                  | OP   |       | UE<br>positioning<br>Ciphering<br>info<br>10.3.7.86                              |  | REL-7 |
| GANSS Deciphering Keys                     | ОР   |       |  |  | REL-7 |
| >Current deciphering key                   | MP   |       | Bit string(56)   |  | REL-7 |
| >Next deciphering key                      | MP   |       | Bit string(56)   |  | REL-7 |
| UE positioning GANSS reference time        | OP   |       | UE positioning GANSS reference time 10.3.7.960                                   |  | REL-7 |
| UE positioning GANSS reference UE position | OP   |       | Ellipsoid<br>point with<br>altitude and<br>uncertainty<br>ellipsoid<br>10.3.8.4c | A priori knowledge of UE 3-D position. | REL-7 |
| UE positioning GANSS ionospheric model     | OP   |       | UE<br>positioning<br>GANSS<br>ionospheric<br>model                               |  | REL-7 |

| Information Element/Group name                          | Need | Multi                                   | Type and reference   | Semantics description    | V     |
|---|------|---|--|--------------------------|-------|
|   |      |   | 10.3.7.92a   |                          |       |
| GANSS Generic DataList                                  | OP   | 1 to<br><maxgan<br>SS&gt;</maxgan<br>   |  |                          | REL-7 |
| >GANSS ID   | OP   |   | Integer (07)   | Same as IE in 10.3.7.90a | REL-7 |
| >GANSS Time Models List                                 |      | 1 to<br><maxgan<br>SS-1&gt;</maxgan<br> |  |                          | REL-7 |
| >>Positioning GANSS Time<br>Model                       | OP   |   | UE<br>positioning<br>GANSS time<br>model<br>10.3.7.97a             |                          |       |
| >UE positioning DGANSS corrections                      | OP   |   | UE positioning DGANSS corrections 10.3.7.91b                       |                          | REL-7 |
| >UE positioning GANSS navigation model                  | OP   |   | UE<br>positioning<br>GANSS<br>navigation<br>model<br>10.3.7.94a    |                          | REL-7 |
| >UE positioning GANSS real-<br>time integrity           | OP   |   | UE<br>positioning<br>GANSS real-<br>time integrity<br>10.3.7.95a   |                          | REL-7 |
| >UE positioning GANSS data bit assistance               | OP   |   | UE positioning GANSS data bit assistance 10.3.7.97b                |                          | REL-7 |
| >UE positioning GANSS reference measurement information | OP   |   | UE positioning GANSS reference measuremen t information 10.3.7.88b |                          | REL-7 |
| >UE positioning GANSS almanac                           | OP   |   | UE<br>positioning<br>GANSS<br>almanac<br>10.3.7.89a                |                          | REL-7 |
| >UE positioning GANSS UTC model                         | OP   |   | UE positioning GANSS UTC model 10.3.7.97c                          |                          | REL-7 |

#### 13.4.29 UNSUPPORTED\_CONFIGURATION

This variable indicates whether a received message contained a configuration that is not supported by the UE.

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| Unsupported configuration      | MP   |       | Boolean            | TRUE: An unsupported configuration has been detected. Set to FALSE when entering UTRA RRC connected mode. Set to FALSE when leaving UTRA RRC connected mode. |

#### 13.4.30 URA IDENTITY

This variable stores the assigned URA identity for this UE when in URA\_PCH state.

| Information Element/Group name | Need | Multi | Type and reference       | Semantics description  |
|--------------------------------|------|-------|--------------------------|--|
| URA identity                   | OP   |       | URA identity<br>10.3.2.6 | Cleared when entering UTRA RRC connected mode. Cleared when leaving UTRA RRC connected mode. |

## 13.4.31 U\_RNTI

This variable stores the assigned U-RNTI for this UE.

| Information Element/Group name | Need | Multi | Type and reference  | Semantics description                         |
|--------------------------------|------|-------|---------------------|---|
| U-RNTI                         | OP   |       | U-RNTI<br>10.3.3.47 | Cleared when leaving UTRA RRC connected mode. |

#### 13.4.32 VALUE\_TAG

This variable contains information about the value tag for the last received system information block of a given type, for all system information blocks using value tags. The UE shall maintain one instance of this variable for the current selected cell. The UE may store several instances of this variable, one for each cell, to be used if the UE returns to these cells.

All IEs in this variable shall be cleared when switched off. All IEs in this variable except for the IE "SIB 16 value tag list" shall be cleared at selection of a new cell and this cell broadcasts an IE "PLMN Identity" in the MIB which is different from the IE "PLMN Identity" broadcast in the MIB in the previously selected cell. The IE "SIB 16 value tag list" is cleared when NAS informs AS about a new selected PLMN.

| Information Element/Group name | Need   | Multi | Type and reference          | Semantics description                             | Version |
|--------------------------------|--------|-------|-----------------------------|---|---------|
| MIB value tag                  | OP     |       | MIB value<br>tag 10.3.8.9   | Value tag for the master information block        |         |
| SB 1 value tag                 | OP     |       | Cell value<br>tag 10.3.8.4  | Value tag for the scheduling block type 1         |         |
| SB 2 value tag                 | OP     |       | Cell value<br>tag 10.3.8.4  | Value tag for the scheduling block type 2         |         |
| SIB 1 value tag                | CV-GSM |       | PLMN value<br>tag 10.3.8.10 | Value tag for the system information block type 1 |         |

| Information Element/Group name | Need         | Multi | Type and reference         | Semantics description           | Version |
|--------------------------------|--------------|-------|----------------------------|---------------------------------|---------|
|                                |              |       |                            | Note: IE 'PLMN                  |         |
|                                |              |       |                            | value tag' is used              |         |
|                                |              |       |                            | for SIB1 but the area scope for |         |
|                                |              |       |                            | SIB 1 is Cell.                  |         |
| SIB 2 value tag                | OP           |       | Cell value                 | Value tag for the               |         |
|                                |              |       | tag 10.3.8.4               | system                          |         |
|                                |              |       |                            | information block type 2        |         |
| SIB 3 value tag                | OP           |       | Cell value                 | Value tag for the               |         |
|                                |              |       | tag 10.3.8.4               | system                          |         |
|                                |              |       |                            | information block               |         |
| SIB 4 value tag                | OP           |       | Cell value                 | type 3 Value tag for the        |         |
| SIB 4 value tag                | OF           |       | tag 10.3.8.4               | system                          |         |
|                                |              |       | lag rololol                | information block               |         |
|                                |              |       |                            | type 4                          |         |
| SIB 5 value tag                | OP           |       | Cell value                 | Value tag for the               |         |
|                                |              |       | tag 10.3.8.4               | system information block        |         |
|                                |              |       |                            | type 5 or 5bis                  |         |
| SIB 6 value tag                | OP           |       | Cell value                 | Value tag for the               |         |
|                                |              |       | tag 10.3.8.4               | system                          |         |
|                                |              |       |                            | information block               |         |
| CHOICE mode                    | MP           |       |                            | type 6                          |         |
| >FDD                           | IVII         |       |                            |                                 |         |
| >TDD                           |              |       |                            | (no data)                       |         |
| SIB 11 value tag               | OP           |       | Cell value                 | Value tag for the               |         |
|                                |              |       | tag 10.3.8.4               | system                          |         |
|                                |              |       |                            | information block type 11       |         |
| SIB 11bis value tag            | OP           |       | Cell value                 | Value tag for the               | REL-6   |
|                                |              |       | tag 10.3.8.4               | system                          |         |
|                                |              |       |                            | information block               |         |
| SIB 12 value tag               | OP           |       | Cell value                 | type 11bis Value tag for the    |         |
| SID 12 value tag               | 01           |       | tag 10.3.8.4               | system                          |         |
|                                |              |       | 19                         | information block               |         |
|                                |              |       |                            | type 12                         |         |
| SIB 13 value tag               | CV-ANSI      |       | Cell value                 | Value tag for the               |         |
|                                |              |       | tag 10.3.8.4               | system information block        |         |
|                                |              |       |                            | type 13                         |         |
| SIB 13.1 value tag             | CV-ANSI      |       | Cell value                 | Value tag for the               |         |
|                                |              |       | tag 10.3.8.4               | system                          |         |
|                                |              |       |                            | information block type 13.1     |         |
| SIB 13.2 value tag             | CV-ANSI      |       | Cell value                 | Value tag for the               |         |
| O.D To.L Value tag             |              |       | tag 10.3.8.4               | system                          |         |
|                                |              |       |                            | information block               |         |
| CID 40.0 verbis to a           | C)/ 44/C/    |       | Callingly                  | type 13.2                       |         |
| SIB 13.3 value tag             | CV-ANSI      |       | Cell value<br>tag 10.3.8.4 | Value tag for the system        |         |
|                                |              |       | lag 10.5.6.4               | information block               |         |
|                                |              |       |                            | type 13.3                       |         |
| SIB 13.4 value tag             | CV-ANSI      |       | Cell value                 | Value tag for the               |         |
|                                |              |       | tag 10.3.8.4               | system information block        |         |
|                                |              |       |                            | type 13.4                       |         |
| SIB 15 value tag               | OP           |       | Cell value                 | Value tag for the               |         |
|                                |              |       | tag 10.3.8.4               | system                          |         |
|                                |              |       |                            | information block               |         |
| SIB 15.1 value tag             | OP           |       | Cell value                 | type 15 Value tag for the       |         |
| 5.5 10.1 value tag             |              |       | tag 10.3.8.4               | system                          |         |
|                                | <del>.</del> | 1     | 1.5.5.0.0.1                | 1 - 7                           |         |

| Information Element/Group name         | Need | Multi                     | Type and reference   | Semantics description  | Version |
|--|------|---------------------------|--|--|---------|
|  |      |                           |  | information block type 15.1  |         |
| SIB 15.2 value tag list                | OP   | 1 to<br><maxsat></maxsat> |  | List of value tags<br>for all stored<br>occurrences of<br>system<br>information block<br>type 15.2 |         |
| >SIB 15.2 value tag                    | MP   |                           | Cell value<br>tag 10.3.8.4                                   |  |         |
| >SIB occurrence identity and value tag | MP   |                           | SIB<br>occurrence<br>identity and<br>value tag<br>10.3.8.20b |  |         |
| SIB 15.3 value tag list                | OP   | 1 to<br><maxsat></maxsat> |  | List of value tags<br>for all stored<br>occurrences of<br>system<br>information block<br>type 15.3 |         |
| >SIB 15.3 value tag                    | MP   |                           | PLMN value<br>tag 10.3.8.10                                  | Value tag for the system information block type 15.3   |         |
| >SIB occurrence identity and value tag | MP   |                           | SIB<br>occurrence<br>identity and<br>value tag<br>10.3.8.20b |  |         |
| SIB 15.4 value tag                     | OP   |                           | Cell value<br>tag 10.3.8.4                                   | Value tag for the system information block type 15.4   |         |

| Information Element/Group name          | Need | Multi   | Type and reference   | Semantics description   | Version |
|---|------|---|--|---|---------|
| SIB 15.5 value tag                      | OP   |   | Cell value<br>tag 10.3.8.4                                   | Value tag for the system information block type 15.5  |         |
| GANSS SIBs                              | OP   | 1 to<br><maxgan<br>SS&gt;</maxgan<br>         |  |   | REL-7   |
| >GANSS ID                               | MD   |   | Integer(07)  | Identifier for<br>GANSS, absence<br>of this IE means<br>Galileo                                       | REL-7   |
| >SIB 15bis value tag                    | OP   |   | Cell value<br>tag 10.3.8.4                                   | Value tag for the system information block type 15bis   | REL-7   |
| >SIB 15.1bis value tag                  | OP   |   | Cell value<br>tag 10.3.8.4                                   | Value tag for the system information block type 15.1bis   | REL-7   |
| >SIB 15.2bis value tag list             | OP   | 1 to<br><maxsat></maxsat>                     |  | List of value tags<br>for all stored<br>occurrences of<br>system<br>information block<br>type 15.2bis | REL-7   |
| >>SIB 15.2bis value tag                 | MP   |   | Cell value<br>tag 10.3.8.4                                   |   | REL-7   |
| >>SIB occurrence identity and value tag | MP   |   | SIB<br>occurrence<br>identity and<br>value tag<br>10.3.8.20b |   | REL-7   |
| >SIB 15.3bis value tag list             | OP   | 1 to<br><maxsat></maxsat>                     |  | List of value tags<br>for all stored<br>occurrences of<br>system<br>information block<br>type 15.3bis | REL-7   |
| >>SIB 15.3bis value tag                 | MP   |   | PLMN value<br>tag 10.3.8.10                                  | Value tag for the system information block type 15.3bis   | REL-7   |
| >>SIB occurrence identity and value tag | MP   |   | SIB<br>occurrence<br>identity and<br>value tag<br>10.3.8.20b | 71  | REL-7   |
| >SIB 15.6 value tag                     | OP   |   | Cell value<br>tag 10.3.8.4                                   | Value tag for the system information block type 15.6  | REL-7   |
| >SIB 15.7 value tag                     | OP   |   | Cell value<br>tag 10.3.8.4                                   | Value tag for the system information block type 15.7  | REL-7   |
| >SIB 15.8 value tag                     | ОР   |   | Cell value<br>tag 10.3.8.4                                   | Value tag for the system information block type 15.8  | REL-7   |
| SIB 16 value tag list                   | OP   | 1 to<br><maxpred<br>efConfig&gt;</maxpred<br> |  | List of value tags<br>for all stored<br>occurrences of the<br>system<br>information block<br>type 16  |         |

| Information Element/Group name                   | Need | Multi | Type and reference  | Semantics description                              | Version |
|--|------|-------|---|--|---------|
| >Predefined configuration identity and value tag | MP   |       | Predefined configuration identity and value tag 10.3.8.11 |  |         |
| SIB 18 value tag                                 | OP   |       | Cell value<br>tag 10.3.8.4                                | Value tag for the system information block type 18 |         |

| Condition | Explanation   |
|-----------|---|
| GSM       | This information is optional when the UE is operating |
|           | in "GSM-MAP mode" and never stored otherwise.         |
| ANSI      | This information is optional when the UE is operating |
|           | in "ANSI-41 mode" and never stored otherwise.         |

#### 13.5 UE RRC Procedure Performance

This subclause defines the performance requirements related to RRC procedures in the UE. Where the total delay is impacted by processing of variable length on the physical layer (e.g. physical layer synchronisation), references to appropriate specifications are given.

#### 13.5.1 Definitions

The following definitions of N1 and N2 are valid only for this UE RRC Procedure Performance specification.

N1 = upper limit on the time required to execute modifications in UE after the reception of a UTRAN -> UE message has been completed. Where applicable (e.g. the physical layer transmission is impacted), the changes shall be adopted in the beginning of the next TTI starting after N1. N1 is specified as a multiple of 10 ms.

N2 = number of 10 ms radio frames from end of reception of UTRAN -> UE message on UE physical layer before the transmission of the UE -> UTRAN response message must be ready to start on a transport channel with no access delay other than the TTI alignment (e.g. DCH, therefore excluding delays caused by RACH procedure etc). The UE response message transmission from the physical layer shall begin at the latest (N2\*10)+TTI ms after completion of the reception of the last TTI carrying the triggering UTRAN -> UE message. When Target State is CELL\_DCH, the UE response message transmission from the physical layer may be additionally delayed by the value of IE "SRB delay".

N1 and N2 are independent (e.g. N2-N1 is not restricted to being less than or equal to 10ms).

## 13.5.2 RRC procedure performance values

NOTE: Times indicated in the table do not include cell reselection.

| Procedure title:                | UTRAN -> UE           | UE -> UTRAN | N1 | N2 | Notes  |
|---------------------------------|-----------------------|-------------|----|----|--|
| RRC Connection                  |                       |             |    |    |  |
| Management Procedures           |                       |             |    |    |  |
| Broadcast of system information | SYSTEM<br>INFORMATION |             |    |    | N2 is not applicable for any<br>system information messages,<br>because there is no response<br>message from the UE. |

| Procedure title:  | UTRAN -> UE                | UE -> UTRAN                            | N1 | N2 | Notes  |
|---|----------------------------|--|----|----|--|
| Master Information Block  | SYSTEM<br>INFORMATION      |  | 5  | NA | No system information data shall be lost due to processing of a MIB received with no detectable errors. This means that the UE shall buffer all system information data received after the MIB until the data can be processed according to the information in the MIB, unless the MIB was received erroneously.   |
| System Information Block type 1   | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type 2   | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type 3   | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type 4   | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type<br>5 or System Information Block<br>type 5bis   | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type 6   | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type 7   | SYSTEM<br>INFORMATION      |  | 5  | NA |  |
| System Information Block type<br>11 or System Information<br>Block type 11bis | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type 12  | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type 13  | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type 14  | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type 15  | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type 16  | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| System Information Block type 18  | SYSTEM<br>INFORMATION      |  | 10 | NA |  |
| RRC connection establishment Target state CELL_DCH                            | RRC<br>CONNECTION<br>SETUP | RRC<br>CONNECTION<br>SETUP<br>COMPLETE | 10 | NA | N1 measures time to the start of tx / rx on DPCH. N2 cannot be specified, because RRC CONNECTION SETUP COMPLETE message is transmitted only after physical layer synchronisation, which also depends on the Node B.  The performance of the physical layer synchronisation procedure is specified in [19] and [20] |
| RRC connection<br>establishment<br>Target state CELL_FACH                     | RRC<br>CONNECTION<br>SETUP | RRC<br>CONNECTION<br>SETUP<br>COMPLETE | 10 | 11 | N1 and N2 applicable as defined (N2 can be tested from the initiation of the power ramp on RACH).  |

| Procedure title:  | UTRAN -> UE                            | UE -> UTRAN   | N1         | N2       | Notes   |
|---|--|---|------------|----------|---|
| RRC connection release From CELL_DCH state                            | RRC<br>CONNECTION<br>RELEASE           | RRC<br>CONNECTION<br>RELEASE<br>COMPLETE                  | 5          | 8        | N1 sets the requirement for the time from the completion of the last repetition of the RRC CONNECTION RELEASE COMPLETE message to the release of the physical channel.  N2 sets the requirement from the end of successful reception of the RRC CONNECTION RELEASE message to the start of the first transmission of the RRC CONNECTION RELEASE |
| RRC connection release From CELL_FACH state                           | RRC<br>CONNECTION<br>RELEASE           | RRC<br>CONNECTION<br>RELEASE<br>COMPLETE                  | NA         | 11       | N1 represents UE internal configuration that cannot be externally observed.   |
| Paging  | PAGING TYPE<br>1                       | CELL UPDATE   | 10         | 11+<br>T | T is the repetition period of SIB7 (applicable for FDD) and SIB14 (applicable for TDD)  |
| UE capability enquiry   | UE CAPABILITY<br>ENQUIRY               | UE CAPABILITY<br>INFORMATION                              | NA         | 8        | N1 is not applicable because the UE configuration does not change.  |
| Security mode control   | SECURITY<br>MODE<br>COMMAND            | SECURITY<br>MODE<br>COMPLETE                              | 5          | 8        |   |
| Signalling connection release procedure                               | SIGNALLING<br>CONNECTION<br>RELEASE    |   | 5          | NA       | N2 is not applicable because there is no response message.  |
| Counter check   | COUNTER<br>CHECK                       | COUNTER<br>CHECK<br>RESPONSE                              | NA         | 8        | N1 is not applicable because the UE configuration does not change.  |
| Radio Bearer control procedures                                       |  |   |            |          |   |
| Radio bearer establishment  Target state CELL_DCH                     | RADIO<br>BEARER<br>SETUP               | RADIO BEARER<br>SETUP<br>COMPLETE /<br>FAILURE            | 10         | NA       | N2 cannot be specified,<br>because the RADIO BEARER<br>SETUP COMPLETE /<br>FAILURE message is<br>transmitted only after physical<br>layer synchronisation, which<br>depends also on Node B.   |
| Radio bearer establishment  From state CELL_FACH to state CELL_FACH   | RADIO<br>BEARER<br>SETUP               | RADIO BEARER<br>SETUP<br>COMPLETE /<br>FAILURE            | 10         | 11       |   |
| Radio bearer establishment  From CELL_DCH to CELL_FACH                | RADIO<br>BEARER<br>SETUP               | RADIO BEARER<br>SETUP<br>COMPLETE                         | NA         | NA       | N1 and N2 cannot be<br>specified, because UE need to<br>read SIBs on BCH before<br>sending RADIO BEARER<br>SETUP COMPLETE   |
| Radio bearer reconfiguration  Target state CELL_DCH                   | RADIO<br>BEARER<br>RECONFIGURA<br>TION | RADIO BEARER<br>RECONFIGURAT<br>ION COMPLETE /<br>FAILURE | 5 or<br>10 | NA       | N2 cannot be specified,<br>because the RADIO BEARER<br>RECONFIGURATION<br>COMPLETE / FAILURE<br>message is transmitted only<br>after physical layer<br>synchronisation, which<br>depends also on Node B.<br>NOTE 1  |
| Radio bearer reconfiguration  From state CELL_FACH to state CELL_FACH | RADIO<br>BEARER<br>RECONFIGURA<br>TION | RADIO BEARER<br>RECONFIGURAT<br>ION COMPLETE /<br>FAILURE | 10         | 11       |   |

| Procedure title:   | UTRAN -> UE                                   | UE -> UTRAN   | N1         | N2 | Notes   |
|--|---|---|------------|----|---|
| Radio bearer reconfiguration  From state CELL_DCH to state CELL_FACH       | RADIO<br>BEARER<br>RECONFIGURA<br>TION        | RADIO BEARER<br>RECONFIGURAT<br>ION COMPLETE                      | NA         | NA | N1 and N2 cannot be<br>specified, because UE need to<br>read SIBs on BCH before<br>sending RADIO BEARER<br>RECONFIGURATION<br>COMPLETE  |
| Radio bearer release Target state CELL_DCH                                 | RADIO<br>BEARER<br>RELEASE                    | RADIO BEARER<br>RELEASE<br>COMPLETE /<br>FAILURE                  | 10         | 11 |   |
| Radio bearer release From state CELL_FACH to state CELL_FACH               | RADIO<br>BEARER<br>RELEASE                    | RADIO BEARER<br>RELEASE<br>COMPLETE /<br>FAILURE                  | 10         | 11 |   |
| Radio bearer release From state CELL_DCH to state CELL_FACH                | RADIO<br>BEARER<br>RELEASE                    | RADIO BEARER<br>RELEASE<br>COMPLETE                               | NA         | NA | N1 and N2 cannot be<br>specified, because UE need to<br>read SIBs on BCH before<br>sending RADIO BEARER<br>RECONFIGURATION<br>COMPLETE  |
| Transport channel reconfiguration  Target state CELL_DCH                   | TRANSPORT<br>CHANNEL<br>RECONFIGURA<br>TION   | TRANSPORT<br>CHANNEL<br>RECONFIGURAT<br>ION COMPLETE /<br>FAILURE | 5 or<br>10 | NA | N2 cannot be specified, because the TRANSPORT CHANNEL RECONFIGURATION COMPLETE / FAILURE message is transmitted only after physical layer synchronisation, which depends also on Node B. NOTE 1 |
| Transport channel reconfiguration  From state CELL_FACH to state CELL_FACH | TRANSPORT<br>CHANNEL<br>RECONFIGURA<br>TION   | TRANSPORT<br>CHANNEL<br>RECONFIGURAT<br>ION COMPLETE /<br>FAILURE | 10         | 11 |   |
| Transport channel reconfiguration  From state CELL_DCH to state CELL_FACH  | TRANSPORT<br>CHANNEL<br>RECONFIGURA<br>TION   | TRANSPORT CHANNEL RECONFIGURAT ION COMPLETE                       | NA         | NA | N1 and N2 cannot be<br>specified, because UE need to<br>read SIBs on BCH before<br>sending TRANSPORT<br>CHANNEL<br>RECONFIGURATION<br>COMPLETE  |
| Transport format combination control  AM or UM RLC mode                    | TRANSPORT<br>FORMAT<br>COMBINATION<br>CONTROL | TRANSPORT FORMAT COMBINATION CONTROL FAILURE                      | 5          | 8  |   |
| Transport format combination control  Transparent mode                     | TRANSPORT<br>FORMAT<br>COMBINATION<br>CONTROL |   | 5          | NA | N2 is not applicable because<br>no response message is<br>defined.  |
| Physical channel reconfiguration  Target state CELL_DCH                    | PHYSICAL<br>CHANNEL<br>RECONFIGURA<br>TION    | PHYSICAL<br>CHANNEL<br>RECONFIGURAT<br>ION COMPLETE /<br>FAILURE  | 5 or<br>8  | NA | N2 cannot be specified, because the PHYSICAL CHANNEL RECONFIGURATION COMPLETE / FAILURE message is transmitted only after physical layer synchronisation, which depends also on Node B. NOTE 1  |
| Physical channel reconfiguration  From state CELL_FACH to state CELL_FACH  | PHYSICAL<br>CHANNEL<br>RECONFIGURA<br>TION    | PHYSICAL<br>CHANNEL<br>RECONFIGURAT<br>ION COMPLETE /<br>FAILURE  | 8          | 9  |   |

| Procedure title:   | UTRAN -> UE                                 | UE -> UTRAN   | N1 | N2 | Notes   |
|--|---|---|----|----|---|
| Physical channel reconfiguration  From state CELL_DCH to state CELL_FACH | PHYSICAL<br>CHANNEL<br>RECONFIGURA<br>TION  | PHYSICAL<br>CHANNEL<br>RECONFIGURAT<br>ION COMPLETE                       | NA | NA | N1 and N2 cannot be<br>specified, because UE need to<br>read SIBs on BCH before<br>sending PHYSICAL<br>CHANNEL<br>RECONFIGURATION<br>COMPLETE   |
| Physical Shared Channel<br>Allocation [TDD only]                         | PHYSICAL<br>SHARED<br>CHANNEL<br>ALLOCATION |   | 5  | NA | N2 is not applicable because no response message is defined.  |
| Uplink Physical Channel<br>Control [TDD only]                            | UPLINK<br>PHYSICAL<br>CHANNEL<br>CONTROL    |   | 8  | NA | Requirements for outer loop<br>and timing advance<br>adjustments are defined in [22]<br>and [20]. N2 is not applicable<br>because there is no response<br>message.                      |
| RRC connection mobility  |   |   |    |    |   |
| Cell update  | CELL UPDATE<br>CONFIRM                      | UTRAN<br>MOBILITY<br>INFORMATION<br>CONFIRM                               | 5  | 8  |   |
|  |   | PHYSICAL CHANNEL RECONFIGURAT ION COMPLETE Target state CELL_FACH         | 8  | 9  |   |
|  |   | PHYSICAL CHANNEL RECONFIGURAT ION COMPLETE Target state CELL_DCH          | 8  | NA | N2 cannot be specified, because the PHYSICAL CHANNEL RECONFIGURATION COMPLETE / FAILURE message is transmitted only after physical layer synchronisation, which depends also on Node B. |
|  |   | TRANSPORT CHANNEL RECONFIGURAT ION COMPLETE Target state CELL_FACH        | 10 | 11 |   |
|  |   | TRANSPORT CHANNEL RECONFIGURAT ION COMPLETE Target state CELL_DCH         | 10 | NA | N2 cannot be specified, because the PHYSICAL CHANNEL RECONFIGURATION COMPLETE / FAILURE message is transmitted only after physical layer synchronisation, which depends also on Node B. |
|  |   | RADIO BEARER<br>RECONFIGURAT<br>ION COMPLETE<br>Target state<br>CELL_FACH | 10 | 11 |   |
|  |   | RADIO BEARER<br>RECONFIGURAT<br>ION COMPLETE<br>Target state<br>CELL_DCH  | 10 | NA | N2 cannot be specified, because the PHYSICAL CHANNEL RECONFIGURATION COMPLETE / FAILURE message is transmitted only after physical layer synchronisation, which depends also on Node B. |

| Procedure title:                            | UTRAN -> UE                                       | UE -> UTRAN   | N1 | N2 | Notes   |
|---|---|---|----|----|---|
|   |   | RADIO BEARER<br>RELEASE<br>COMPLETE<br>Target state<br>CELL_DCH | 10 | 11 |   |
| URA update                                  | URA UPDATE<br>CONFIRM                             | UTRAN<br>MOBILITY<br>INFORMATION<br>CONFIRM                     | 5  | 8  |   |
| UTRAN mobility information                  | UTRAN<br>MOBILITY<br>INFORMATION                  | UTRAN<br>MOBILITY<br>INFORMATION<br>CONFIRM /<br>FAILURE        | 5  | 8  |   |
| Active set update                           | ACTIVE SET<br>UPDATE                              | ACTIVE SET<br>UPDATE<br>COMPLETE /<br>FAILURE                   | NA | 5  | The requirements on UE combining and power control performance for both UL and DL are specified by RAN WG4 in [21] and [19].  Also in case of branch addition the COMPLETE / FAILURE message is transmitted without waiting for the new branch to stabilise, therefore N2 is specified. |
| Inter-RAT handover to UTRAN                 | HANDOVER TO<br>UTRAN<br>COMMAND<br>(other system) | HANDOVER TO<br>UTRAN<br>COMPLETE                                | NA | NA | The performance of this procedure is specified in 05.10.  |
| Inter-RAT handover from UTRAN               | HANDOVER<br>FROM UTRAN<br>COMMAND                 | HANDOVER<br>FROM UTRAN<br>FAILURE                               | NA | NA | The performance of this procedure is specified in [19] and [20].  |
| Measurement procedures  Measurement control | MEASUREMEN<br>T CONTROL                           | MEASUREMENT<br>CONTROL<br>FAILURE                               | 5  | 8  | Response to measurement inquiry depends on physical layer measurement. Response time is defined in [19] and [20]. N1 and N2 only define the processing of the message.  |

NOTE 1: The lower value applies when the UE is ordered to do a serving HS-DSCH cell change, changing no other information than contained in the IE "H-RNTI", the IE "Downlink HS-PDSCH information", the IE "Uplink DPCH power control info" and/or the IE "Serving HS-DSCH radio link indicator" (FDD only).

## 13.6 RB information parameters for signalling radio bearer RB 0

The following Radio Bearer parameter values apply for signalling radio bearer RB0 for TDD and for FDD, if either UE or UTRAN do not support common channel mapping on HS-DSCH:

| Information element/ Group name | Value   | Comment  |
|---------------------------------|---------|--|
| RLC info                        |         |  |
| >Uplink RLC mode                | TM      |  |
| >>Transmission RLC discard      | omitted | Neither discard is used, nor will there be a reset   |
| >>Segmentation indication       | FALSE   |  |
| >Downlink RLC mode              | UM      |  |
| >>DL UM RLC LI size             | 7       |  |
| RB mapping info                 |         | Single multiplexing option   |
| >Uplink mapping info            |         |  |
| >>UL transport channel          | RACH    | RACH corresponding with selected PRACH   |
| >>RLC size list                 | N/A     | If available the size in the IE "Additional Dynamic Transport Format Information for CCCH" for the transport channel used.  Else the first TF defined in the Transport Format Set for the transport channel is used. |
| >>MAC logical channel priority  | 1       |  |
| >Downlink mapping info          |         |  |
| >>DL transport channel          | FACH    |  |

Procedure descriptions in subclause 8.6.4.8 shall not be applied for the IE "RB mapping info" that is used for signalling radio bearer RB0.

## 13.6a RB information parameters for SHCCH

The following Radio Bearer parameter values apply for SHCCH:

| Information element/ Group name | Value   | Comment  |
|---------------------------------|---------|--|
| RLC info                        |         |  |
| >Uplink RLC mode                | TM      |  |
| >>Transmission RLC discard      | omitted | Neither discard is used, nor will there be a reset   |
| >>Segmentation indication       | FALSE   |  |
| >Downlink RLC mode              | UM      |  |
| RB mapping info                 |         |  |
| >Uplink mapping info            |         | Option 1   |
| >>UL transport channel          | RACH    | RACH corresponding with selected PRACH               |
| >>RLC size list                 | N/A     | The first TF defined in the Transport Format Set for |
|                                 |         | the transport channel that is used                   |
| >>MAC logical channel priority  | 1       |  |
| >Downlink mapping info          |         |  |
| >>DL transport channel          | FACH    |  |
| >Uplink mapping info            |         | Option 2   |
| >>UL transport channel          | USCH    |  |
| >>UL Transport Channel Identity | 1       |  |
| >>MAC logical channel priority  | 1       |  |
| >>RLC size list                 | N/A     | The first TF defined in the Transport Format Set for |
|                                 |         | the transport channel that is used                   |
| >Downlink mapping info          |         |  |
| >>DL transport channel          | DSCH    |  |
| >>DL Transport Channel Identity | 1       |  |

## 13.6b RB information parameters for BCCH mapped to FACH

The following Radio Bearer parameter values apply for BCCH mapped to FACH:

| Information element/ Group name | Value | Comment |
|---------------------------------|-------|---------|
| Downlink RLC mode               | TM    |         |
| Segmentation indication         | FALSE |         |

## 13.6c RB information parameters for PCCH mapped to PCH

The following Radio Bearer parameter values apply for PCCH mapped to PCH:

| Information element/ Group name | Value | Comment |
|---------------------------------|-------|---------|
| Downlink RLC mode               | TM    |         |
| Segmentation indication         | FALSE |         |

## 13.6d Parameters for BCCH mapped to BCH

The transport format parameters for BCH are specified in [34].

# 13.6e RB information parameters for signalling radio bearer RB 0 mapped on HS-DSCH and RACH

The following Radio Bearer parameter values apply for signalling radio bearer RB0, if UE and UTRAN support common channel mapping on HS-DSCH:

NOTE: FDD only.

| Information element/ Group name | Value   | Comment  |
|---------------------------------|---------|--|
| RLC info                        |         |  |
| >Uplink RLC mode                | TM      |  |
| >>Transmission RLC discard      | omitted | Neither discard is used, nor will there be a reset   |
| >>Segmentation indication       | FALSE   |  |
| >Downlink RLC mode              | UM      |  |
| >>Length indicator size         | 7       |  |
| RB mapping info                 |         | Single multiplexing option   |
| >Uplink mapping info            |         |  |
| >>UL transport channel          | RACH    | RACH corresponding with selected PRACH   |
| >>RLC size list                 | N/A     | If available the size in the IE "Additional Dynamic Transport Format Information for CCCH" for the transport channel used.  Else the first TF defined in the Transport Format Set for the transport channel is used. |
| >>MAC logical channel priority  | 1       |  |
| >Downlink mapping info          |         |  |
| >>DL transport channel          | HS-DSCH |  |

# 13.6f RB information parameters for BCCH mapped to HS-DSCH

The following Radio Bearer parameter values apply for BCCH mapped to HS-DSCH:

NOTE: FDD only.

| Information element/ Group name | Value | Comment   |
|---------------------------------|-------|---|
| Downlink RLC mode               | TM    |   |
| Segmentation indication         | FALSE |   |
| MAC-ehs reordering queue        | N/A   | No MAC-ehs reordering queue is configured for BCCH reception. |

## 13.6g RB information parameters for PCCH mapped to HS-DSCH

The following Radio Bearer parameter values apply for PCCH mapped to HS-DSCH:

NOTE: FDD only.

| Information element/ Group name | Value | Comment   |
|---------------------------------|-------|---|
| Downlink RLC mode               | TM    |   |
| Segmentation indication         | FALSE |   |
| MAC-ehs reordering queue        | N/A   | No MAC-ehs reordering queue is configured for PCCH reception. |

## 13.7 Parameter values for default radio configurations

The UE shall support the use of the default radio configurations that are specified in the following.

NOTE 1: These configurations are based on [41] and cover a number of RAB and signalling connection configurations.

In the table that is used to specify the parameter values for these default configurations, the following principles are used:

- Optional IEs that are not used are omitted;
- In case no parameter value is specified in a column, this means the value given the previous (left side) column applies.
- NOTE 2: If needed, signalling radio bearer RB4 is established after the completion of handover.
- NOTE 3: For each default configuration, the value of FDD, 3.84 Mcps TDD, 7.68 Mcps TDD and 1.28 Mcps TDD parameters are specified. All parameters apply to FDD, 3.84 Mcps TDD, 7.68 Mcps and 1.28 Mcps TDD modes, unless explicitly stated otherwise. It should be noted that in this respect default configurations differ from pre-defined configurations, which only include parameter values for one mode.
- NOTE 4: The transport format sizes, indicated in the following table, concern the RLC PDU size, since all configurations concern dedicated channels. The transport block sizes indicated in TS 34.108 are different since these include the size of the MAC header.
- NOTE 5: The tabular values included in this subclause, represent the actual IE values as in clause 10, and not the ASN.1 representation of these values.

| Configuration                     | 3.4 kbps signalling                | 13.6 kbps<br>signalling            | Unused<br>configuration | 12.2 kbps speech<br>+<br>3.4 kbps signalling         |
|-----------------------------------|------------------------------------|------------------------------------|-------------------------|--|
| Ref 34.108                        | 2                                  | 3                                  |                         | 4  |
| Default configuration identity    | 0                                  | 1                                  | 2                       | 3  |
| RB INFORMATION                    |                                    |                                    |                         |  |
| rb-Identity                       | RB1: 1, RB2: 2,<br>RB3: 3          | RB1: 1, RB2: 2,<br>RB3: 3          |                         | RB1: 1, RB2: 2,<br>RB3: 3, RB5: 5,<br>RB6: 6, RB7: 7 |
| rlc-InfoChoice                    | RIc-info                           | RIc-info                           |                         | RIc-info   |
| >ul-RLC-Mode                      | RB1: UM<br>RB2- RB3: AM            | RB1: UM<br>RB2- RB3: AM            |                         | RB1: UM<br>RB2- RB3: AM<br>RB5-RB7: TM               |
| >>transmissionRLC-<br>DiscardMode | RB1: N/A<br>RB2- RB3:<br>NoDiscard | RB1: N/A<br>RB2- RB3:<br>NoDiscard |                         | RB1: N/A<br>RB2- RB3:<br>NoDiscard<br>RB5- RB7: N/A  |
| >>>maxDat                         | RB1: N/A<br>RB2- RB3: 15           | RB1: N/A<br>RB2- RB3: 15           |                         | RB1: N/A<br>RB2- RB3: 15<br>RB5- RB7: N/A            |

| Configuration                                   | 3.4 kbps signalling   | 13.6 kbps   | Unused        | 12.2 kbps speech   |
|---|---|---|---------------|--|
|   |   | signalling  | configuration | 3.4 kbps signalling  |
| >>transmissionWindowSiz<br>e                    | RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise | RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise |               | RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5- RB7: N/A |
| >>timerRST                                      | RB1: N/A<br>RB2- RB3: 300   | RB1: N/A<br>RB2- RB3: 300   |               | RB1: N/A<br>RB2- RB3: 300<br>RB5- RB7: N/A   |
| >>max-RST                                       | RB1: N/A<br>RB2- RB3: 1   | RB1: N/A<br>RB2- RB3: 1   |               | RB1: N/A<br>RB2- RB3: 1<br>RB5- RB7: N/A   |
| >>pollingInfo                                   | RB1: N/A<br>RB2- RB3: as below  | RB1: N/A<br>RB2- RB3: as below  |               | RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A  |
| >>>lastTransmissionPDU-<br>Poll                 | RB2- RB3: FALSE   | RB2- RB3: FALSE   |               | RB2- RB3: FALSE  |
| >>>lastRetransmissionPD<br>U-Poll               | RB2- RB3: FALSE   | RB2- RB3: FALSE   |               | RB2- RB3: FALSE  |
| >>>timerPollPeriodic                            | RB2- RB3: 300   | RB2- RB3: 100   |               | RB2- RB3: 300  |
| >>segmentationIndication                        | RB1- RB3: N/A   | RB1- RB3: N/A   |               | RB1- RB3: N/A<br>RB5- RB7: FALSE   |
| >dl-RLC-Mode                                    | RB1: UM<br>RB2- RB3: AM   | RB1: UM<br>RB2- RB3: AM   |               | RB1: UM<br>RB2- RB3: AM<br>RB5- RB7: TM  |
| >>inSequenceDelivery                            | RB1: N/A<br>RB2- RB3: TRUE  | RB1: N/A<br>RB2- RB3: TRUE  |               | RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB7: N/A  |
| >>receivingWindowSize                           | RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise | RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise |               | RB1: N/A RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5- RB7: N/A                   |
| >>dl-RLC-StatusInfo                             | RB1: N/A<br>RB2- RB3: as below  | RB1: N/A<br>RB2- RB3: as below  |               | RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A  |
| >>>timerStatusProhibit                          | RB2- RB3: 100   | RB2- RB3: 100   |               | RB2- RB3: 100  |
| >>>missingPDU-Indicator                         | RB2- RB3: FALSE   | RB2- RB3: FALSE   |               | RB2- RB3: FALSE  |
| >>>timerStatusPeriodic >>segmentationIndication | RB2- RB3: 300<br>RB1- RB3: N/A  | RB2- RB3: 100<br>RB1- RB3: N/A  |               | RB2- RB3: 300<br>RB1- RB3: N/A<br>RB5- RB7: FALSE  |
| rb-MappingInfo                                  |   |   |               |  |
| >UL-<br>LogicalChannelMappings                  | OneLogicalChannel   | OneLogicalChannel   |               | OneLogicalChannel  |
| >>ul-<br>TransportChannelType                   | Dch   | Dch   |               | Dch  |
| >>>transportChannelIdentit y                    | RB1- RB3: 1   | RB1- RB3: 1   |               | RB1- RB3: 4<br>RB5: 1, RB6: 2,<br>RB7: 3   |
| >>logicalChannelIdentity                        | RB1: 1, RB2: 2,<br>RB3: 3   | RB1: 1, RB2: 2,<br>RB3: 3   |               | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A   |
| >>rlc-SizeList                                  | RB1- RB3:<br>configured   | RB1- RB3:<br>configured   |               | RB1- RB3:<br>configured<br>RB5- RB7: N/A   |
| >>mac-<br>LogicalChannelPriority                | RB1: 1, RB2: 2,<br>RB3: 3   | RB1: 1, RB2: 2,<br>RB3: 3   |               | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: 5   |
| >DL-<br>logicalChannelMappingList               |   |   |               |  |

| Configuration   | 3.4 kbps signalling                           | 13.6 kbps                                     | Unused        | 12.2 kbps speech   |
|---|---|---|---------------|--|
|   |   | signalling                                    | configuration | 3.4 kbps signalling  |
| >>Mapping option 1                                      | One mapping option                            | One mapping option                            |               | One mapping option   |
| >>>dl-<br>TransportChannelType                          | Dch   | Dch   |               | Dch  |
| >>>>transportChannellden tity                           | RB1- RB3: 1                                   | RB1- RB3: 1                                   |               | RB1- RB3: 4<br>RB5: 1, RB6: 2,<br>RB7: 3   |
| >>>logicalChannelIdentity                               | RB1: 1, RB2: 2,<br>RB3: 3                     | RB1: 1, RB2: 2,<br>RB3: 3                     |               | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A   |
| TrCH INFORMATION PER TrCH                               |   |   |               |  |
| UL-   |   |   |               |  |
| AddReconfTransChInfoList >Uplink transport channel type | dch   | dch   |               | dch  |
| >transportChannelIdentity                               | TrCH1: 1                                      | TrCH1: 1                                      |               | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 4  |
| >transportFormatSet                                     | DedicatedTransChT<br>FS                       | DedicatedTransChT<br>FS                       |               | DedicatedTransChT  |
| >>dynamicTF-information                                 |   |   |               |  |
| >>>tf0/ tf0,1   | TrCH1: (0x144,<br>1x144)                      | TrCH1: (0x144,<br>1x144)                      |               | TrCH1: (0x81) TrCH2: (0x 103, 1x103) TrCH3: (0x 60, 1x60) TrCH4: (0x144, 1x144)                                  |
| >>>>rlcSize   | BitMode                                       | BitMode                                       |               | BitMode  |
| >>>>sizeType  | TrCH1: type 2,<br>part1= 2, part2= 0<br>(144) | TrCH1: type 2,<br>part1= 2, part2= 0<br>(144) |               | TrCH1: type 1: 81<br>TrCH2: type 1: 103<br>TrCH3: type 1: 60<br>TrCH4: 2: type 2,<br>part1= 2, part2= 0<br>(144) |
| >>>numberOfTbSizeList                                   | TrCH1: Zero, one                              | TrCH1: Zero, one                              |               | TrCH1: Zero<br>TrCH2-4: Zero, one  |
| >>>>logicalChannelList                                  | All   | All   |               | All  |
| >>>tf 1   | N/A   | N/A   |               | TrCH1: (1x39)<br>TrCH2- TrCH4: N/A   |
| >>>numberOfTransportBl                                  |   |   |               | TrCH1: One   |
| >>>rlc-Size<br>>>>>sizeType                             |   |   |               | TrCH1: BitMode TrCH1: 1: 39  |
| >>>numberOfTbSizeList                                   |   |   |               | TrCH1: 0ne   |
| >>>>logicalChannelList                                  |   |   |               | TrCH1: all   |
| >>>tf 2   | N/A   | N/A   |               | TrCH1: (1x81)<br>TrCH2- TrCH4: N/A   |
| >>>>numberOfTransportBl ocks                            |   |   |               | TrCH1: One   |
| >>>rlc-Size   |   |   |               | TrCH1: BitMode   |
| >>>>sizeType  |   |   |               | TrCH1: type 1: 81  |
| >>>numberOfTbSizeList                                   |   |   |               | TrCH1: One<br>TrCH1: all   |
| >>>logicalChannelList >>semistaticTF-Information        |   |   |               | IIUTI. all   |
| >>semistatic i F-information                            | TrCH1: 40                                     | TrCH1: 10                                     |               | TrCH1- TrCH3: 20<br>TrCH4: 40  |
| >>>channelCodingType                                    | Convolutional                                 | Convolutional                                 |               | Convolutional  |
| >>>codingRate   | TrCH1: Third                                  | TrCH1: Third                                  |               | TrCH1- TrCH2:<br>Third<br>TrCH3: Half<br>TrCH4: Third  |

| Configuration   | 3.4 kbps signalling       | 13.6 kbps                 | Unused        | 12.2 kbps speech   |
|---|---------------------------|---------------------------|---------------|--|
|   |                           | signalling                | configuration | 3.4 kbps signalling  |
| >>>rateMatchingAttribute                                  | TrCH1: 160                | TrCH1: 160                |               | TrCH1: 200<br>TrCH2: 190<br>TrCH3: 235<br>TrCH4: 160                                     |
| >>>crc-Size   | TrCH1: 16                 | TrCH1: 16                 |               | TrCH1: 12<br>TrCH2- TrCH3: 0<br>TrCH4: 16  |
| DL-<br>AddReconfTransChInfoList                           |                           |                           |               |  |
| >Downlink transport<br>channel type                       | dch                       | dch                       |               | dch  |
| >dl-<br>TransportChannelIdentity<br>(should be as for UL) | TrCH1: 1                  | TrCH1: 1                  |               | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 4  |
| >tfs-SignallingMode                                       | SameAsUL                  | SameAsUL                  |               | Explicit <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""></only> |
| >>transportFormatSet                                      |                           |                           |               | DedicatedTransChT<br>FS  |
| >>>dynamicTF-information                                  |                           |                           |               | T-0114 (4::0)  |
| >>>tf0/ tf0,1<br>>>>>rlcSize                              |                           |                           |               | TrCH1: (1x0)<br>bitMode  |
| >>>>sizeType  |                           |                           |               | TrCH1: type 1: 0   |
| >>>numberOfTbSizeList                                     |                           |                           |               | TrCH1: One   |
| >>>logicalChannelList                                     |                           |                           |               | All  |
| >>ULTrCH-Id   | TrCH1: 1                  | TrCH1: 1                  |               | TrCH1: 1, TrCH2: 2,  |
|   |                           |                           |               | TrCH3: 3, TrCH4: 4   |
| >dch-QualityTarget  | 2                         | 2                         |               | 2  |
| >>bler-QualityValue                                       | TrCH1: 5x10 <sup>-2</sup> | TrCH1: 5x10 <sup>-2</sup> |               | TrCH1: 7x10 <sup>-3</sup> TrCH2- TrCH4: Absent   |
| TrCH INFORMATION, COMMON                                  |                           |                           |               |  |
| ul-CommonTransChInfo                                      |                           |                           |               |  |
| >tfcs-ID (TDD only)                                       | 1                         | 1                         |               | 1  |
| >sharedChannelIndicator (TDD only)                        | FALSE                     | FALSE                     |               | FALSE  |
| >tfc-Subset   | Absent, not required      | Absent, not required      |               | Absent, not required   |
| >ul-TFCS  | Normal TFCI signalling    | Normal TFCI signalling    |               | Normal TFCI signalling   |
| >>explicitTFCS-<br>ConfigurationMode                      | Complete                  | Complete                  |               | Complete   |
| >>>ctfcSize   | Ctfc2Bit                  | Ctfc2Bit                  |               | Ctfc6Bit   |
| >>>>TFCS representation                                   | Addition                  | Addition                  | <u> </u>      | Addition   |
| >>>>TFCS list   |                           |                           |               |  |
| >>>>TFCS 1  | (TF0)                     | (TF0)                     |               | (TF0, TF0, TF0,<br>TF0)  |
| >>>>>ctfc   | 0                         | 0                         |               | 0  |
| >>>>>gainFactorInform ation                               | Computed                  | Computed                  |               | Computed   |
| >>>>>>referenceTFCld                                      | 0                         | 0                         |               | 0  |
| >>>>TFCS 2  | (TF1)                     | (TF1)                     |               | (TF1, TF0, TF0,<br>TF0)  |
| >>>>>ctfc   | 1                         | 1                         |               | 1  |
| >>>>>gainFactorInform ation                               | Signalled                 | Signalled                 |               | Computed   |
| >>>>>βc (FDD only)  | 11                        | 11                        |               | N/A  |
| >>>>>βd   | 15                        | 15                        |               | N/A  |
| >>>>>>referenceTFCld                                      | 0                         | 0                         |               | 0  |

| Configuration                            | 3.4 kbps signalling | 13.6 kbps         | Unused        | 12.2 kbps speech        |
|--|---------------------|-------------------|---------------|-------------------------|
|  |                     | signalling        | configuration | 3.4 kbps signalling     |
| >>>>TFCS 3                               |                     |                   |               | (TF2, TF1, TF1, TF0)    |
| >>>>>ctfc                                |                     |                   |               | 11                      |
| >>>>>gainFactorInform ation              |                     |                   |               | Computed                |
| >>>>>>referenceTFCld                     |                     |                   |               | 0                       |
| >>>>TFCS 4                               |                     |                   |               | (TF0, TF0, TF0,<br>TF1) |
| >>>>>ctfc                                |                     |                   |               | 12                      |
| >>>>>gainFactorInform ation              |                     |                   |               | Computed                |
| >>>>>βc (FDD only)                       |                     |                   |               | N/A                     |
| >>>>>βd                                  |                     |                   |               | N/A                     |
| >>>>>referenceTFCId                      |                     |                   |               | 0                       |
| >>>>TFCS 5                               |                     |                   |               | (TF1, TF0, TF0,<br>TF1) |
| >>>>>ctfc                                |                     |                   |               | 13                      |
| >>>>> gainFactorInform ation             |                     |                   |               | Computed                |
| >>>>>>referenceTFCId                     |                     |                   |               | 0                       |
| >>>>TFCS 6                               |                     |                   |               | (TF2, TF1, TF1,<br>TF1) |
| >>>>>ctfc                                |                     |                   |               | 23                      |
| >>>>>gainFactorInform ation              |                     |                   |               | Signalled               |
| >>>>>βc (FDD only)                       |                     |                   |               | 11                      |
| >>>>>βd                                  |                     |                   |               | 15                      |
| >>>>>referenceTFCId                      |                     |                   |               | 0                       |
| dl-CommonTransChInfo                     |                     |                   |               |                         |
| >tfcs-SignallingMode PhyCH INFORMATION   | Same as UL          | Same as UL        |               | Same as UL              |
| FDD                                      |                     |                   |               |                         |
| UL-DPCH-InfoPredef                       |                     |                   |               |                         |
| >ul-DPCH-                                |                     |                   |               |                         |
| PowerControlInfo >>powerControlAlgorithm | Algorithm 1         | Algorithm 1       |               | Algorithm 1             |
| >>>tpcStepSize                           | 1 dB                | 1 dB              |               | 1 dB                    |
| >tfci-Existence                          | TRUE                | TRUE              |               | TRUE                    |
| >puncturingLimit                         | 1                   | 1                 |               | 0.88                    |
| DL-<br>CommonInformationPredef           |                     |                   |               |                         |
| >dI-DPCH-InfoCommon                      |                     |                   |               |                         |
| >>spreadingFactor                        | 256                 | 128               |               | 128                     |
| >>tfci-Existence                         | FALSE               | FALSE             |               | FALSE                   |
| >>pilotBits                              | 4                   | 4                 |               | 4                       |
| >>positionFixed                          | N/A                 | N/A               |               | Fixed                   |
| PhyCH INFORMATION<br>3.84/7.68 Mcps TDD  |                     |                   |               |                         |
| UL-DPCH-InfoPredef                       |                     |                   |               |                         |
| >ul-DPCH-<br>PowerControlInfo            |                     |                   |               |                         |
| >>dpch-ConstantValue                     | 0                   | 0                 |               | 0                       |
| >commonTimeslotInfo                      | 0                   |                   |               |                         |
| >>secondInterleavingMode                 | frameRelated        | frameRelated      |               | frameRelated            |
| >>tfci-Coding                            | 4                   | 4                 |               | 16                      |
| >>puncturingLimit                        | 1                   | 0.92              |               | 0.88                    |
| >>repetitionPeriodAndLeng                | repetitionPeriod1   | repetitionPeriod1 |               | repetitionPeriod1       |
| th                                       |                     |                   |               |                         |

| Configuration                               | 3.4 kbps signalling | 13.6 kbps<br>signalling | Unused configuration | 12.2 kbps speech    |
|---|---------------------|-------------------------|----------------------|---------------------|
|   |                     | g                       | John Januarion       | 3.4 kbps signalling |
| DL-   |                     |                         |                      |                     |
| CommonInformationPredef                     |                     |                         |                      |                     |
| >dl-DPCH-InfoCommon                         |                     |                         |                      |                     |
| >>commonTimeslotInfo                        |                     |                         |                      |                     |
| >>>secondInterleavingMod e                  | frameRelated        | frameRelated            |                      | frameRelated        |
| >>>tfci-Coding                              | 4                   | 4                       |                      | 16                  |
| >>>puncturingLimit                          | 1                   | 0.92                    |                      | 0.92                |
| >>>repetitionPeriodAndLe                    | repetitionPeriod1   | repetitionPeriod1       |                      | repetitionPeriod1   |
| PhyCH INFORMATION<br>1.28 Mcps TDD          |                     |                         |                      |                     |
| UL-DPCH-InfoPredef                          |                     |                         |                      |                     |
| >commonTimeslotInfo                         |                     |                         |                      |                     |
| >>secondInterleavingMode                    | frameRelated        | frameRelated            |                      | frameRelated        |
| >>tfci-Coding                               | 4                   | 4                       |                      | 16                  |
| >>puncturingLimit                           | 1                   | 0.64                    |                      | 0.60                |
| >>repetitionPeriodAndLeng th                | repetitionPeriod1   | repetitionPeriod1       |                      | repetitionPeriod1   |
| DL-<br>CommonInformationPredef              |                     |                         |                      |                     |
| >dl-DPCH-InfoCommon<br>>>commonTimeslotInfo |                     |                         |                      |                     |
| >>secondInterleavingMod                     | frameRelated        | frameRelated            |                      | frameRelated        |
| е   |                     |                         |                      |                     |
| >>>tfci-Coding                              | 4                   | 4                       |                      | 16                  |
| >>>puncturingLimit                          | 1                   | 0.64                    |                      | 0.60                |
| >>>repetitionPeriodAndLe ngth               | repetitionPeriod1   | repetitionPeriod1       |                      | repetitionPeriod1   |

| Configuration                  | 28.8 kbps conv.<br>CS- data + | 32 kbps conv. CS-<br>data + | 64kbps conv. CS-<br>data + | 14.4 kbps               |
|--------------------------------|-------------------------------|-----------------------------|----------------------------|-------------------------|
|                                | 3.4 kbps signalling           | 3.4 kbps signalling         | 3.4 kbps signalling        | streaming CS-<br>data + |
|                                | 3.4 kups signaling            | 3.4 kups signaling          | 3.4 kups signaling         | 3.4 kbps signalling     |
| Ref 34.108                     | 12                            | 14                          | 13                         | 15                      |
| Default configuration identity | 4                             | 5                           | 6                          | 7                       |
| RB INFORMATION                 |                               |                             |                            |                         |
| rb-Identity                    | RB1: 1, RB2: 2,               | RB1: 1, RB2: 2,             | RB1: 1, RB2: 2,            | RB1: 1, RB2: 2,         |
| _                              | RB3: 3, RB5: 5                | RB3: 3, RB5: 5              | RB3: 3, RB5: 5             | RB3: 3, RB5: 5          |
| rlc-InfoChoice                 | RIc-info                      | RIc-info                    | RIc-info                   | RIc-info                |
| >ul-RLC-Mode                   | RB1: UM                       | RB1: UM                     | RB1: UM                    | RB1: UM                 |
|                                | RB2- RB3: AM                  | RB2- RB3: AM                | RB2- RB3: AM               | RB2- RB3: AM            |
|                                | RB5: TM                       | RB5: TM                     | RB5: TM                    | RB5: TM                 |
| >>transmissionRLC-             | RB1: N/A                      | RB1: N/A                    | RB1: N/A                   | RB1: N/A                |
| DiscardMode                    | RB2- RB3:                     | RB2- RB3:                   | RB2- RB3:                  | RB2- RB3:               |
|                                | NoDiscard                     | NoDiscard                   | NoDiscard                  | NoDiscard               |
|                                | RB5: N/A                      | RB5: N/A                    | RB5: N/A                   | RB5: N/A                |
| >>>maxDat                      | RB1: N/A                      | RB1: N/A                    | RB1: N/A                   | RB1: N/A                |
|                                | RB2- RB3: 15                  | RB2- RB3: 15                | RB2- RB3: 15               | RB2- RB3: 15            |
|                                | RB5: N/A                      | RB5: N/A                    | RB5: N/A                   | RB5: N/A                |
| >>transmissionWindowSiz        | RB1: N/A                      | RB1: N/A                    | RB1: N/A                   | RB1: N/A                |
| е                              | RB2- RB3: 128 for             | RB2- RB3: 128 for           | RB2- RB3: 128 for          | RB2- RB3: 128 for       |
|                                | UEs with more than            | UEs with more than          | UEs with more than         | UEs with more than      |
|                                | 10 kbyte "total RLC           | 10 kbyte "total RLC         | 10 kbyte "total RLC        | 10 kbyte "total RLC     |
|                                | AM buffer size" and           | AM buffer size" and         | AM buffer size" and        | AM buffer size" and     |
|                                | 32 otherwise                  | 32 otherwise                | 32 otherwise               | 32 otherwise            |
|                                | RB5: N/A                      | RB5: N/A                    | RB5: N/A                   | RB5: N/A                |
| >>timerRST                     | RB1: N/A                      | RB1: N/A                    | RB1: N/A                   | RB1: N/A                |
|                                | RB2- RB3: 300                 | RB2- RB3: 300               | RB2- RB3: 300              | RB2- RB3: 300           |
|                                | RB5: N/A                      | RB5: N/A                    | RB5: N/A                   | RB5: N/A                |

| Configuration                                  | 28.8 kbps conv.<br>CS- data +<br>3.4 kbps signalling  | 32 kbps conv. CS-<br>data +<br>3.4 kbps signalling  | 64kbps conv. CS-<br>data +<br>3.4 kbps signalling   | 14.4 kbps<br>streaming CS-<br>data +  |
|--|---|---|---|---|
|  | 3.4 KDPS SIGNAMING  | 5.4 KDPS Signalling   | 3.4 KDPS SIGNAMING  | 3.4 kbps signalling   |
| >>max-RST                                      | RB1: N/A<br>RB2- RB3: 1<br>RB5: N/A   |
| >>pollingInfo                                  | RB1: N/A<br>RB2- RB3: as below<br>RB5: N/A  |
| >>>lastTransmissionPDU-<br>Poll                | RB2- RB3: FALSE   | RB2- RB3: FALSE   | RB2- RB3: FALSE   | RB2- RB3: FALSE   |
| >>>lastRetransmissionPD U-Poll                 | RB2- RB3: FALSE   | RB2- RB3: FALSE   | RB2- RB3: FALSE   | RB2- RB3: FALSE   |
| >>>timerPollPeriodic                           | RB2- RB3: 300   | RB2- RB3: 300   | RB2- RB3: 300   | RB2- RB3: 300   |
| >>segmentationIndication                       | RB1- RB3: N/A<br>RB5: FALSE   |
| >dl-RLC-Mode                                   | RB1: UM<br>RB2- RB3: AM<br>RB5: TM  |
| >>inSequenceDelivery                           | RB1: N/A<br>RB2- RB3: TRUE<br>RB5: N/A  |
| >>receivingWindowSize                          | RB1: N/A RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5: N/A | RB1: N/A RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5: N/A | RB1: N/A RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5: N/A | RB1: N/A RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5: N/A |
| >>dl-RLC-StatusInfo                            | RB1: N/A<br>RB2- RB3: as below<br>RB5: N/A  |
| >>>timerStatusProhibit                         | RB2- RB3: 100   | RB2- RB3: 100   | RB2- RB3: 100   | RB2- RB3: 100   |
| >>>missingPDU-Indicator                        | RB2- RB3: FALSE   | RB2- RB3: FALSE   | RB2- RB3: FALSE   | RB2- RB3: FALSE   |
| >>>timerStatusPeriodic                         | RB2- RB3: 300   | RB2- RB3: 300   | RB2- RB3: 300   | RB2- RB3: 300   |
| >>segmentationIndication                       | RB1- RB3: N/A<br>RB5: FALSE   |
| rb-MappingInfo<br>>UL-                         | OneLogicalChannel   | OneLogicalChannel   | OneLogicalChannel   | OneLogicalChannel   |
| LogicalChannelMappings >>ul-                   | Dch   | Dch   | Dch   | Dch   |
| TransportChannelType >>>transportChannelIdenti | RB1- RB3: 2   | RB1- RB3: 2   | RB1- RB3: 2   | RB1- RB3: 2   |
| ty >>logicalChannelIdentity                    | RB5: 1  | RB5: 1  | RB5: 1  | RB5: 1  |
| >>logicalChannelidentity                       | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5: N/A   |
| >>rlc-SizeList                                 | RB1- RB3:<br>configured<br>RB5: N/A   | RB1- RB3:<br>configured<br>RB5: N/A   | RB1- RB3:<br>configured<br>RB5: N/A   | RB1- RB3:<br>configured<br>RB5: N/A   |
| >>mac-<br>LogicalChannelPriority               | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5: 5   |
| >DL-<br>logicalChannelMappingList              |   |   |   |   |
| >>Mapping option 1 >>>dl-                      | One mapping option  Dch   | One mapping option Dch  | One mapping option  Dch   | One mapping option Dch  |
| TransportChannelType >>>>transportChannelIden  | RB1- RB3: 2   | RB1- RB3: 2   | RB1- RB3: 2   | RB1- RB3: 2   |
| tity   | RB5: 1  | RB5: 1  | RB5: 1  | RB5: 1  |
| >>>logicalChannelIdentity                      | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5: N/A   |
| TrCH INFORMATION PER TrCH                      |   |   |   |   |

| Configuration   | 28.8 kbps conv.<br>CS- data +<br>3.4 kbps signalling   | 32 kbps conv. CS-<br>data +<br>3.4 kbps signalling  | 64kbps conv. CS-<br>data +<br>3.4 kbps signalling   | 14.4 kbps<br>streaming CS-<br>data +   |
|---|--|---|---|--|
|   |  |   |   | 3.4 kbps signalling  |
| UL-<br>AddReconfTransChInfoLis<br>t                       |  |   |   |  |
| >Uplink transport channel type                            | dch  | dch   | dch   | dch  |
| >transportChannelIdentity                                 | TrCH1: 1, TrCH2: 2   | TrCH1: 1, TrCH2: 2  | TrCH1: 1, TrCH2: 2  | TrCH1: 1, TrCH2: 2   |
| >transportFormatSet                                       | DedicatedTransChT<br>FS  | DedicatedTransChT<br>FS   | DedicatedTransChT<br>FS   | DedicatedTransChT<br>FS  |
| >>dynamicTF-information                                   | T 0114 /0 570  | T 0114 /0 040   | T 0114 (0.040   | T 0114 (0 570  |
| >>>tf0/ tf0,1   | TrCH1: (0x576,<br>1x576, 2x576)<br>TrCH2: (0x144,<br>1x144)                                    | TrCH1: (0x640,<br>1x640)<br>TrCH2: (0x144,<br>1x144)  | TrCH1: (0x640,<br>2x640)<br>TrCH2: (0x144,<br>1x144)  | TrCH1: (0x576,<br>1x576)<br>TrCH2: (0x144,<br>1x144)   |
| >>>rlcSize  | TrCH1: OctetMode<br>TrCH2:BitMode  | TrCH1: OctetMode<br>TrCH2:BitMode   | TrCH1: OctetMode<br>TrCH2:BitMode   | TrCH1: OctetMode<br>TrCH2:BitMode  |
| >>>>sizeType  | TrCH1: type 2,<br>part1= 9, part2= 2<br>(576)<br>TrCH2: type 2,<br>part1= 2, part2= 0<br>(144) | TrCH1: type 2,<br>part1= 11, part2= 2<br>(640)<br>TrCH2: type 2,<br>part1= 2, part2= 0<br>(144) | TrCH1: type 2,<br>part1= 11, part2= 2<br>(640)<br>TrCH2: type 2,<br>part1= 2, part2= 0<br>(144) | TrCH1: type 2,<br>part1= 9,<br>part2= 2 (576)<br>TrCH2: type 2,<br>part1= 2,<br>part2= 0 (144) |
| >>>numberOfTbSizeList                                     | TrCH1: Zero,1, 2<br>TrCH2: Zero, one   | TrCH1: Zero, one TrCH2: Zero, one   | TrCH1: Zero, 2<br>TrCH2: Zero, one  | TrCH1: Zero, one,<br>TrCH2: Zero, one  |
| >>>logicalChannelList                                     | All  | All   | All   | All  |
| >>semiStaticTF- Information                               |  |   |   |  |
| >>>tti  | TrCH1: 40<br>TrCH2: 40   | TrCH1: 20<br>TrCH2: 40  | TrCH1: 20<br>TrCH2: 40  | TrCH1: 40<br>TrCH2: 40   |
| >>>channelCodingType                                      | TrCH1: Turbo<br>TrCH2:<br>Convolutional  | TrCH1: Turbo<br>TrCH2:<br>Convolutional   | TrCH1: Turbo<br>TrCH2:<br>Convolutional   | TrCH1: Turbo<br>TrCH2:<br>Convolutional  |
| >>>codingRate   | TrCH1: N/A<br>TrCH2: Third   | TrCH1: N/A<br>TrCH2: Third  | TrCH1: N/A<br>TrCH2: Third  | TrCH1: N/A<br>TrCH2: Third   |
| >>>rateMatchingAttribute                                  | TrCH1: 180<br>TrCH2: 160   | TrCH1: 185<br>TrCH2: 160  | TrCH1: 170<br>TrCH2: 160  | TrCH1: 165<br>TrCH2: 160   |
| >>>crc-Size   | TrCH1: 16<br>TrCH2: 16   | TrCH1: 16<br>TrCH2: 16  | TrCH1: 16<br>TrCH2: 16  | TrCH1: 16<br>TrCH2: 16   |
| DL-<br>AddReconfTransChInfoLis<br>t                       |  |   |   |  |
| >Downlink transport channel type                          | dch  | dch   | dch   | dch  |
| >dl-<br>TransportChannelIdentity<br>(should be as for UL) | TrCH1: 1, TrCH2: 2   | TrCH1: 1, TrCH2: 2  | TrCH1: 1, TrCH2: 2  | TrCH1: 1, TrCH2: 2   |
| >tfs-SignallingMode                                       | SameAsUL   | SameAsUL  | SameAsUL  | SameAsUL   |
| >>transportFormatSet >>>dynamicTF-information             |  |   |   |  |
| >>>tf0/ tf0,1   |  |   |   |  |
| >>>rlcSize<br>>>>>sizeType                                |  |   |   |  |
| >>>>numberOfTbSizeList                                    |  |   |   |  |
| >>>>logicalChannelList                                    |  |   |   |  |
| >>ULTrCH-Id   | TrCH1: 1, TrCH2: 2   | TrCH1: 1, TrCH2: 2  | TrCH1: 1, TrCH2: 2  | TrCH1: 1, TrCH2: 2   |
| >dch-QualityTarget >>bler-QualityValue                    | TrCH1: 2x10 <sup>-3</sup> TrCH2: Absent  | TrCH1: 2x10 <sup>-3</sup> TrCH2: Absent   | TrCH1: 2x10 <sup>-3</sup> TrCH2: Absent   | TrCH1: 1x10 <sup>-2</sup> TrCH2: Absent  |
| TrCH INFORMATION,<br>COMMON                               | HOHZ. AUSEIIL  | HOHZ. AUSEIIL   | HOHZ. AUSEIIL   | TIOTIZ. ADSEIR   |
| ul-CommonTransChInfo                                      |  |   |   |  |
| >tfcs-ID (TDD only)                                       | 1  | 1   | 1   | 1  |

| Configuration                      | 28.8 kbps conv.<br>CS- data + | 32 kbps conv. CS-<br>data + | 64kbps conv. CS-<br>data + | 14.4 kbps<br>streaming CS- |
|------------------------------------|-------------------------------|-----------------------------|----------------------------|----------------------------|
|                                    | 3.4 kbps signalling           | 3.4 kbps signalling         | 3.4 kbps signalling        | data +                     |
|                                    |                               |                             |                            | 3.4 kbps signalling        |
| >sharedChannelIndicator (TDD only) | FALSE                         | FALSE                       | FALSE                      | FALSE                      |
| >tfc-Subset                        | Absent, not required          | Absent, not required        | Absent, not required       | Absent, not required       |
| >ul-TFCS                           | Normal TFCI                   | Normal TFCI                 | Normal TFCI                | Normal TFCI                |
| U 17500                            | signalling                    | signalling                  | signalling                 | signalling                 |
| >>explicitTFCS- ConfigurationMode  | Complete                      | Complete                    | Complete                   | Complete                   |
| >>>ctfcSize                        | Ctfc4Bit                      | Ctfc2Bit                    | Ctfc2Bit                   | Ctfc4Bit                   |
| >>>TFCS representation             | Addition                      | Addition                    | Addition                   | Addition                   |
| >>>>TFCS list                      |                               |                             |                            |                            |
| >>>>TFCS 1                         | (TF0, TF0)                    | (TF0, TF0)                  | (TF0, TF0)                 | (TF0, TF0)                 |
| >>>>>ctfc                          | 0                             | 0                           | 0                          | 0                          |
| >>>>>gainFactorInform              | Computed                      | Computed                    | Computed                   | Computed                   |
| ation >>>> referenceTFCId          | 0                             | 0                           | 0                          | 0                          |
| >>>>TFCS 2                         | (TF1, TF0)                    | (TF1, TF0)                  | (TF1, TF0)                 | (TF1, TF0)                 |
| >>>>>ctfc                          | 1                             | 1                           | 1                          | 1                          |
| >>>>>gainFactorInform              | Computed                      | Computed                    | Computed                   | Computed                   |
| ation                              | ·                             | ·                           | •                          | ·                          |
| >>>>>βc (FDD only)                 | N/A                           | N/A                         | N/A                        | N/A                        |
| >>>>>βd                            | N/A                           | N/A                         | N/A                        | N/A                        |
| >>>>>referenceTFCld                | 0                             | 0                           | 0                          | 0                          |
| >>>>TFCS 3                         | (TF2, TF0)                    | (TF0, TF1)                  | (TF0, TF1)                 | (TF0, TF1)                 |
| >>>>>ctfc                          | 2                             | 2                           | 2                          | 2                          |
| >>>>>gainFactorInform ation        | Computed                      | Computed                    | Computed                   | Computed                   |
| >>>>>referenceTFCId                | 0                             | 0                           | 0                          | 0                          |
| >>>>TFCS 4                         | (TF0, TF1)                    | (TF1, TF1)                  | (TF1, TF1)                 | (TF1, TF1)                 |
| >>>>>ctfc                          | 3                             | 3<br>Circallad              | 3<br>Circallad             | 3<br>Circallad             |
| >>>>>gainFactorInform ation        | Computed                      | Signalled                   | Signalled                  | Signalled                  |
| >>>>>βc (FDD only)                 | N/A                           | 8                           | 8                          | 11                         |
| >>>>>βd                            | N/A                           | 15                          | 15                         | 15                         |
| >>>>>referenceTFCId                | 0                             | 0                           | 0                          | 0                          |
| >>>>TFCS 5                         | (TF1, TF1)                    | N/A                         | N/A                        |                            |
| >>>>>ctfc >>>>>gainFactorInform    | 4<br>Computed                 |                             |                            |                            |
| >>>>>gainFactorinform              | Computed                      |                             |                            |                            |
| >>>>>referenceTFCId                | 0                             |                             |                            |                            |
| >>>>TFCS 6                         | (TF2, TF1)                    | N/A                         | N/A                        |                            |
| >>>>>ctfc                          | 5                             |                             |                            |                            |
| >>>>>gainFactorInform ation        | Signalled                     |                             |                            |                            |
| >>>>>βc (FDD only)                 | 8                             |                             |                            |                            |
| >>>>>βd                            | 15                            |                             |                            |                            |
| >>>>>>referenceTFCld               | 0                             |                             |                            |                            |
| >>>>TFCS 7                         |                               |                             |                            |                            |
| >>>>>ctfc                          |                               |                             |                            |                            |
| >>>>>gainFactorInform ation        |                               |                             |                            |                            |
| >>>>>>referenceTFCId               |                               |                             |                            |                            |
| >>>>TFCS 8                         |                               |                             |                            |                            |
| >>>>>ctfc                          |                               |                             |                            |                            |
| >>>>>gainFactorInform              |                               |                             |                            |                            |
| >>>>>referenceTFCId                |                               |                             |                            |                            |
| >>>>TFCS 9                         |                               |                             |                            |                            |
| >>>>>ctfc                          |                               |                             |                            |                            |
| >>>>>gainFactorInform              |                               |                             |                            |                            |
| ation                              |                               |                             |                            |                            |

| Configuration                           | 28.8 kbps conv.<br>CS- data +<br>3.4 kbps signalling | 32 kbps conv. CS-<br>data +<br>3.4 kbps signalling | 64kbps conv. CS-<br>data +<br>3.4 kbps signalling | 14.4 kbps<br>streaming CS-<br>data + |
|---|--|--|---|--------------------------------------|
|   | 5.4 Kbps signalling                                  | 3.4 Kbps signalling                                | 3.4 Kbps signaling                                | 3.4 kbps signalling                  |
| >>>>>referenceTFCId                     |  |  |   |                                      |
| >>>>TFCS 10                             |  |  |   |                                      |
| >>>>>Ctfc                               |  |  |   |                                      |
| >>>>>gainFactorInform ation             |  |  |   |                                      |
| >>>>>βc (FDD only)                      |  |  |   |                                      |
| >>>>>βd                                 |  |  |   |                                      |
| >>>>>>referenceTFCId                    |  |  |   |                                      |
| dl-CommonTransChInfo                    |  |  |   |                                      |
| >tfcs-SignallingMode                    | Same as UL   | Same as UL   | Same as UL  | Same as UL                           |
| PhyCH INFORMATION FDD                   |  |  |   |                                      |
| UL-DPCH-InfoPredef                      |  |  |   |                                      |
| >ul-DPCH-<br>PowerControlInfo           |  |  |   |                                      |
| >>powerControlAlgorithm                 | Algorithm 1  | Algorithm 1  | Algorithm 1                                       | Algorithm 1                          |
| >>>tpcStepSize                          | 1 dB   | 1 dB   | 1 dB  | 1 dB                                 |
| >tfci-Existence                         | TRUE   | TRUE   | TRUE  | TRUE                                 |
| >puncturingLimit                        | 0.92   | 0.8  | 0.92  | 1                                    |
| DL-<br>CommonInformationPrede           |  |  |   |                                      |
| >dl-DPCH-InfoCommon                     |  |  |   |                                      |
| >>spreadingFactor                       | 64   | 64   | 32  | 128                                  |
| >>tfci-Existence                        | TRUE   | TRUE   | TRUE  | TRUE                                 |
| >>pilotBits                             | 8  | 8  | 8   | 8                                    |
| >>positionFixed                         | Flexible   | Flexible   | Flexible  | Flexible                             |
| PhyCH INFORMATION<br>3.84/7.68 Mcps TDD |  |  |   |                                      |
| UL-DPCH-InfoPredef                      |  |  |   |                                      |
| >ul-DPCH-<br>PowerControlInfo           |  |  |   |                                      |
| >>dpch-ConstantValue                    | 0  | 0  | 0   | 0                                    |
| >commonTimeslotInfo                     |  |  |   |                                      |
| >>secondInterleavingMod e               | frameRelated   | frameRelated                                       | frameRelated                                      | frameRelated                         |
| >>tfci-Coding                           | 16   | 8  | 8   | 8                                    |
| >>puncturingLimit                       | 0.44   | 0.8  | 0.56  | 0.8                                  |
| >>repetitionPeriodAndLen gth            | repetitionPeriod1                                    | repetitionPeriod1                                  | repetitionPeriod1                                 | repetitionPeriod1                    |
| DL-<br>CommonInformationPrede<br>f      |  |  |   |                                      |
| >dl-DPCH-InfoCommon                     |  |  |   |                                      |
| >>commonTimeslotInfo                    |  |  |   |                                      |
| >>>secondInterleavingMo de              | frameRelated   | frameRelated                                       | frameRelated                                      | frameRelated                         |
| >>>tfci-Coding                          | 16   | 8  | 8   | 8                                    |
| >>>puncturingLimit                      | 0.44   | 0.64   | 0.56  | 0.8                                  |
| >>>repetitionPeriodAndLe ngth           | repetitionPeriod1                                    | repetitionPeriod1                                  | repetitionPeriod1                                 | repetitionPeriod1                    |
| PhyCH INFORMATION<br>1.28 Mcps TDD      |  |  |   |                                      |
| UL-DPCH-InfoPredef                      |  |  |   |                                      |
| >commonTimeslotInfo                     |  |  |   |                                      |
| >>secondInterleavingMod e               | frameRelated   | frameRelated                                       | frameRelated                                      | frameRelated                         |
|   |  |  | +   | <b>+</b>                             |
| >>tfci-Coding                           | 16   | 8  | 8   | 8                                    |

| Configuration                      | 28.8 kbps conv.<br>CS- data +<br>3.4 kbps signalling | 32 kbps conv. CS-<br>data +<br>3.4 kbps signalling | 64kbps conv. CS-<br>data +<br>3.4 kbps signalling | 14.4 kbps<br>streaming CS-<br>data + |
|------------------------------------|--|--|---|--------------------------------------|
|                                    | 0.4 Kops signaling                                   | 0.4 Kbps signaling                                 | 0.4 Kbps signaling                                | 3.4 kbps signalling                  |
| >>repetitionPeriodAndLen gth       | repetitionPeriod1                                    | repetitionPeriod1                                  | repetitionPeriod1                                 | repetitionPeriod1                    |
| DL-<br>CommonInformationPrede<br>f |  |  |   |                                      |
| >dl-DPCH-InfoCommon                |  |  |   |                                      |
| >>commonTimeslotInfo               |  |  |   |                                      |
| >>>secondInterleavingMo de         | frameRelated   | frameRelated                                       | frameRelated                                      | frameRelated                         |
| >>>tfci-Coding                     | 16   | 8  | 8   | 8                                    |
| >>>puncturingLimit                 | 0.64   | 0.60   | 0.64  | 0.88                                 |
| >>>repetitionPeriodAndLe ngth      | repetitionPeriod1                                    | repetitionPeriod1                                  | repetitionPeriod1                                 | repetitionPeriod1                    |

| Configuration                     | 28.8 kbps<br>streaming CS-<br>data +<br>3.4 kbps signalling   | 57.6 kbps<br>streaming CS-<br>data +<br>3.4 kbps signalling   | 12.2/7.95/5.9/4.75<br>kbps speech +<br>3.4 kbps signalling   |
|-----------------------------------|---|---|--|
| Ref 34.108                        | 16  | 17  | 4a   |
| Default configuration identity    | 8   | 9   | 10   |
| RB INFORMATION                    |   |   |  |
| rb-Identity                       | RB1: 1, RB2: 2,<br>RB3: 3, RB5: 5   | RB1: 1, RB2: 2,<br>RB3: 3, RB5: 5   | RB1: 1, RB2: 2,<br>RB3: 3, RB5: 5,<br>RB6: 6, RB7: 7   |
| rlc-InfoChoice                    | RIc-info  | RIc-info  | RIc-info   |
| >ul-RLC-Mode                      | RB1: UM<br>RB2- RB3: AM<br>RB5: TM  | RB1: UM<br>RB2- RB3: AM<br>RB5: TM  | RB1: UM<br>RB2- RB3: AM<br>RB5-RB7: TM   |
| >>transmissionRLC-<br>DiscardMode | RB1: N/A<br>RB2- RB3:<br>NoDiscard<br>RB5: N/A  | RB1: N/A<br>RB2- RB3:<br>NoDiscard<br>RB5: N/A  | RB1: N/A<br>RB2- RB3:<br>NoDiscard<br>RB5- RB7: N/A  |
| >>>maxDat                         | RB1: N/A<br>RB2- RB3: 15<br>RB5: N/A  | RB1: N/A<br>RB2- RB3: 15<br>RB5: N/A  | RB1: N/A<br>RB2- RB3: 15<br>RB5- RB7: N/A  |
| >>transmissionWindowSiz<br>e      | RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5: N/A | RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5: N/A | RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5- RB7: N/A |
| >>timerRST                        | RB1: N/A<br>RB2- RB3: 300<br>RB5: N/A   | RB1: N/A<br>RB2- RB3: 300<br>RB5: N/A   | RB1: N/A<br>RB2- RB3: 300<br>RB5- RB7: N/A   |
| >>max-RST                         | RB1: N/A<br>RB2- RB3: 1<br>RB5: N/A   | RB1: N/A<br>RB2- RB3: 1<br>RB5: N/A   | RB1: N/A<br>RB2- RB3: 1<br>RB5- RB7: N/A   |
| >>pollingInfo                     | RB1: N/A<br>RB2- RB3: as below<br>RB5: N/A  | RB1: N/A<br>RB2- RB3: as below<br>RB5: N/A  | RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A  |
| >>>lastTransmissionPDU-<br>Poll   | RB2- RB3: FALSE   | RB2- RB3: FALSE   | RB2- RB3: FALSE  |
| >>>lastRetransmissionPD<br>U-Poll | RB2- RB3: FALSE   | RB2- RB3: FALSE   | RB2- RB3: FALSE  |
| >>>timerPollPeriodic              | RB2- RB3: 300   | RB2- RB3: 300   | RB2- RB3: 300  |
| >>segmentationIndication          | RB1- RB3: N/A<br>RB5: FALSE   | RB1- RB3: N/A<br>RB5: FALSE   | RB1- RB3: N/A<br>RB5- RB7: FALSE   |

| Configuration                       | 28.8 kbps<br>streaming CS-<br>data +  | 57.6 kbps<br>streaming CS-<br>data +  | 12.2/7.95/5.9/4.75<br>kbps speech +<br>3.4 kbps signalling   |
|-------------------------------------|---|---|--|
|                                     | 3.4 kbps signalling   | 3.4 kbps signalling   |  |
| >dl-RLC-Mode                        | RB1: UM<br>RB2- RB3: AM<br>RB5: TM  | RB1: UM<br>RB2- RB3: AM<br>RB5: TM  | RB1: UM<br>RB2- RB3: AM<br>RB5- RB7: TM  |
| >>inSequenceDelivery                | RB1: N/A<br>RB2- RB3: TRUE<br>RB5: N/A  | RB1: N/A<br>RB2- RB3: TRUE<br>RB5: N/A  | RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB7: N/A  |
| >>receivingWindowSize               | RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5: N/A | RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5: N/A | RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5- RB7: N/A |
| >>dl-RLC-StatusInfo                 | RB1: N/A<br>RB2- RB3: as below<br>RB5: N/A  | RB1: N/A<br>RB2- RB3: as below<br>RB5: N/A  | RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A  |
| >>>timerStatusProhibit              | RB2- RB3: 100   | RB2- RB3: 100   | RB2- RB3: 100  |
| >>>missingPDU-Indicator             | RB2- RB3: FALSE   | RB2- RB3: FALSE   | RB2- RB3: FALSE  |
| >>>timerStatusPeriodic              | RB2- RB3: 300   | RB2- RB3: 300   | RB2- RB3: 300  |
| >>segmentationIndication            | RB1- RB3: N/A<br>RB5: FALSE   | RB1- RB3: N/A<br>RB5: FALSE   | RB1- RB3: N/A<br>RB5- RB7: FALSE   |
| rb-MappingInfo                      |   |   |  |
| >UL-<br>LogicalChannelMappings      | OneLogicalChannel   | OneLogicalChannel   | OneLogicalChannel  |
| >>ul-<br>TransportChannelType       | Dch   | Dch   | Dch  |
| >>>transportChannelldenti<br>ty     | RB1- RB3: 2<br>RB5: 1   | RB1- RB3: 2<br>RB5: 1   | RB1- RB3: 4<br>RB5: 1, RB6: 2,<br>RB7: 3   |
| >>logicalChannelIdentity            | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5: N/A   | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5: N/A   | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A   |
| >>rlc-SizeList                      | RB1- RB3:<br>configured<br>RB5: N/A   | RB1- RB3:<br>configured<br>RB5: N/A   | RB1- RB3:<br>configured<br>RB5- RB7: N/A   |
| >>mac-<br>LogicalChannelPriority    | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5: 5   | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5: 5   | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: 5   |
| >DL-<br>logicalChannelMappingList   |   |   |  |
| >>Mapping option 1                  | One mapping option  | One mapping option  | One mapping option   |
| >>>dl-<br>TransportChannelType      | Dch   | Dch   | Dch  |
| >>>>transportChannellden tity       | RB1- RB3: 2<br>RB5: 1   | RB1- RB3: 2<br>RB5: 1   | RB1- RB3: 4<br>RB5: 1, RB6: 2,<br>RB7: 3   |
| >>>logicalChannelIdentity           | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5: N/A   | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5: N/A   | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A   |
| TrCH INFORMATION PER TrCH           |   |   |  |
| UL-<br>AddReconfTransChInfoLis<br>t |   |   |  |
| >Uplink transport channel type      | dch   | dch   | dch  |
| >transportChannelIdentity           | TrCH1: 1, TrCH2: 2  | TrCH1: 1, TrCH2: 2  | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 4  |
| >transportFormatSet                 | DedicatedTransChT<br>FS   | DedicatedTransChT<br>FS   | DedicatedTransChT<br>FS  |
| >>dynamicTF-information             |   |   |  |

| Configuration                 | 28.8 kbps                    | 57.6 kbps                    | 12.2/7.95/5.9/4.75                   |
|-------------------------------|------------------------------|------------------------------|--------------------------------------|
|                               | streaming CS-<br>data +      | streaming CS-<br>data +      | kbps speech +<br>3.4 kbps signalling |
|                               | 3.4 kbps signalling          | 3.4 kbps signalling          |                                      |
| >>>tf0/ tf0,1                 | TrCH1: (0x576,               | TrCH1: (0x576,               | TrCH1: (0x81)                        |
|                               | 1x576, 2x576)                | 1x576, 2x576,                | TrCH2: (0x 103                       |
|                               | TrCH2: (0x144,               | 3x576, 4x576)                | TrCH3: (0x 60)                       |
|                               | 1x144)                       | TrCH2: (0x144,               | TrCH4: (0x144)                       |
|                               |                              | 1x144)                       | 5                                    |
| >>>rlcSize                    | TrCH1: OctetMode             | TrCH1: OctetMode             | BitMode                              |
|                               | TrCH2:BitMode TrCH1: type 2, | TrCH2:BitMode TrCH1: type 2, | TrCH1: type 1: 81                    |
| >>>>sizeType                  | part1= 9,                    | part1= 9,                    | TrCH1: type 1: 61                    |
|                               | part1= 9,<br>part2= 2 (576)  | part1= 9,<br>part2= 2 (576)  | TrCH3: type 1: 103                   |
|                               | TrCH2: type 2,               | TrCH2: type 2,               | TrCH4: type 2,                       |
|                               | part1= 2,                    | part1= 2,                    | part1= 2, part2= 0                   |
|                               | part2= 0 (144)               | part2= 0 (144)               | (144)                                |
| >>>numberOfTbSizeList         | TrCH1: Zero, one, 2          | TrCH1: Zero, one,            | TrCH1-4: Zero                        |
|                               | TrCH2: Zero, one             | 2, 3, 4                      |                                      |
|                               |                              | TrCH2: Zero, one             |                                      |
| >>>logicalChannelList         | All                          | All                          | All                                  |
| >>>tf 1                       |                              |                              | TrCH1: (1x39)                        |
|                               |                              |                              | TrCH2: (1x53)                        |
|                               |                              |                              | TrCH3: (1x60)                        |
| >>> numberOfTransas artDl     |                              |                              | TrCH4: (1x144) TrCH1-4: One          |
| >>>numberOfTransportBl ocks   |                              |                              | TICH1-4. One                         |
| >>>rlc-Size                   |                              |                              | TrCH1-3: BitMode                     |
| >>>>sizeType                  |                              |                              | TrCH1: type 1: 39                    |
|                               |                              |                              | TrCH2: type 1: 53                    |
|                               |                              |                              | TrCH3: type 1: 60                    |
|                               |                              |                              | TrCH4: type 2,                       |
|                               |                              |                              | part1= 2, part2= 0                   |
| 0.77.0                        |                              |                              | (144)                                |
| >>>numberOfTbSizeList         |                              |                              | TrCH1-4: One                         |
| >>>logicalChannelList >>>tf 2 |                              |                              | TrCH1-4: all<br>TrCH1: (1x42)        |
| >>>u 2                        |                              |                              | TrCH1: (1x42)                        |
|                               |                              |                              | TrCH3- TrCH4: N/A                    |
| >>>numberOfTransportBl        |                              |                              | TrCH1-2: One                         |
| ocks                          |                              |                              |                                      |
| >>>rlc-Size                   |                              |                              | TrCH1: BitMode                       |
| >>>>sizeType                  |                              |                              | TrCH1: type 1: 42                    |
|                               |                              |                              | TrCH2: type 1: 63                    |
| >>>numberOfTbSizeList         |                              |                              | TrCH1-2: One                         |
| >>>logicalChannelList         |                              |                              | TrCH1: all                           |
| >>>tf 3                       |                              |                              | TrCH1: (1x55)                        |
|                               |                              |                              | TrCH2: (1x84)                        |
| >>> numberOfTransac #DI       |                              |                              | TrCH3- TrCH4: N/A TrCH1-2: One       |
| >>>numberOfTransportBl ocks   |                              |                              | IICHI-Z: ONE                         |
| >>>rlc-Size                   |                              |                              | TrCH1: BitMode                       |
| >>>>sizeType                  |                              |                              | TrCH1: type 1: 55                    |
|                               |                              |                              | TrCH2: type 1: 84                    |
| >>>numberOfTbSizeList         |                              |                              | TrCH1-2: One                         |
| >>>logicalChannelList         |                              |                              | TrCH1: all                           |
| >>>tf 4                       |                              |                              | TrCH1: (1x75)                        |
|                               |                              |                              | TrCH2: (1x103)                       |
|                               |                              |                              | TrCH3- TrCH4: N/A                    |
| >>>>numberOfTransportBl       |                              |                              | TrCH1-2: One                         |
| ocks<br>>>>>rlc-Size          |                              |                              | TrCH1: BitMode                       |
| >>>>sizeType                  |                              |                              | TrCH1: type 1: 75                    |
|                               |                              |                              | TrCH2: type 1: 103                   |
| >>>numberOfTbSizeList         |                              |                              | TrCH1-2: One                         |
| >>>logicalChannelList         |                              |                              | TrCH1: all                           |
|                               |                              |                              |                                      |

| Configuration  | 28.8 kbps<br>streaming CS-<br>data +                                  | 57.6 kbps<br>streaming CS-<br>data +                                  | 12.2/7.95/5.9/4.75<br>kbps speech +<br>3.4 kbps signalling  |
|--|---|---|---|
|  | 3.4 kbps signalling   | 3.4 kbps signalling   | 0.4 Kbpo digitaliing  |
| >>>tf 5  |   |   | TrCH1: (1x81)<br>TrCH2- TrCH4: N/A  |
| >>>numberOfTransportBl ocks  |   |   | TrCH1: One  |
| >>>rlc-Size  |   |   | TrCH1: BitMode  |
| >>>>sizeType   |   |   | TrCH1: type 1: 81   |
| >>>numberOfTbSizeList  |   |   | TrCH1: One  |
| >>>>logicalChannelList   |   |   | TrCH1: all  |
| >>semiStaticTF-  |   |   |   |
| Information  | T 0114 40   | T 0114 40   | T 0114 T 0110 00  |
| >>>tti   | TrCH1: 40<br>TrCH2: 40  | TrCH1: 40<br>TrCH2: 40  | TrCH1- TrCH3: 20<br>TrCH4: 40   |
| >>>channelCodingType   | TrCH1: Turbo  | TrCH1: Turbo  | Convolutional   |
|  | TrCH2:<br>Convolutional   | TrCH2:<br>Convolutional   |   |
| >>>codingRate  | TrCH1: N/A  | TrCH1: N/A  | TrCH1- TrCH2:   |
| >>>codingRate  | TrCH1: N/A TrCH2: Third   | TrCH2: Third  | Third TrCH3: Half   |
|  |   |   | TrCH4: Third  |
| >>>rateMatchingAttribute   | TrCH1: 155  | TrCH1: 145  | TrCH1: 200  |
|  | TrCH2: 160  | TrCH2: 160  | TrCH2: 190  |
|  |   |   | TrCH3: 235  |
|  |   |   | TrCH4: 160  |
| >>>crc-Size  | TrCH1: 16   | TrCH1: 16   | TrCH1: 12   |
|  | TrCH2: 16   | TrCH2: 16   | TrCH2- TrCH3: 0<br>TrCH4: 16  |
| DL-<br>AddReconfTransChInfoLis<br>t  |   |   |   |
| >Downlink transport  | dch   | dch   | dch   |
| channel type   |   |   |   |
| >dl-   |   |   |   |
| TransportChannelIdentity (should be as for UL)   | TrCH1: 1, TrCH2: 2  | TrCH1: 1, TrCH2: 2  | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 4   |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode   | TrCH1: 1, TrCH2: 2  SameAsUL  | SameAsUL  | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""></only>   |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet   |   | ·   | Independent <only and<="" different="" is="" on="" td="" tf0="" trch1=""></only>  |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet >>>dynamicTF-information  |   | ·   | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS</only>  |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>>tf0,1   |   | ·   | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0)</only>  |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>>tf0/tf0,1 >>>>rlcSize   |   | ·   | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode</only>  |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>>tf0/tf0,1 >>>>rlcSize >>>>sizeType  |   | ·   | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0</only>   |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>>tf0/tf0,1 >>>>rlcSize >>>>sizeType >>>>numberOfTbSizeList   |   | ·   | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One</only>  |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>>tf0/tf0,1 >>>>rlcSize >>>>sizeType  |   | ·   | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One All TrCH1: 1, TrCH2: 2,</only>  |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>tf0/tf0,1 >>>rlcSize >>>>sizeType >>>numberOfTbSizeList >>>logicalChannelList >>ULTrCH-Id  | SameAsUL  | SameAsUL  | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One All</only>  |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>tf0/tf0,1 >>>>rlcSize >>>>sizeType >>>>logicalChannelList  | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup>               | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup>               | TrCH3: 3, TrCH4: 4  Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One All TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4  TrCH1: 7x10<sup>-3</sup></only> |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>tf0/tf0,1 >>>rlcSize >>>sizeType >>>numberOfTbSizeList >>>logicalChannelList >>ULTrCH-Id >dch-QualityTarget  | SameAsUL  TrCH1: 1, TrCH2: 2  | SameAsUL  TrCH1: 1, TrCH2: 2  | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One All TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4</only>   |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>>tf0/tf0,1 >>>>rlcSize >>>>sizeType >>>>logicalChannelList >>ULTrCH-Id  >dch-QualityTarget >>bler-QualityValue  TrCH INFORMATION,  | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup>               | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup>               | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One All TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4  TrCH1: 7x10<sup>-3</sup> TrCH2- TrCH4:</only>       |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>>tf0/tf0,1 >>>>rlcSize >>>>sizeType >>>>logicalChannelList >>ULTrCH-Id  >dch-QualityTarget >>bler-QualityValue  TrCH INFORMATION, COMMON   | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup>               | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup>               | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One All TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4  TrCH1: 7x10<sup>-3</sup> TrCH2- TrCH4:</only>       |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>tf0/tf0,1 >>>>rlcSize >>>>sizeType >>>>logicalChannelList >>ULTrCH-Id  >dch-QualityTarget >>bler-QualityValue  TrCH INFORMATION, COMMON ul-CommonTransChInfo   | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup>               | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup>               | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One All TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4  TrCH1: 7x10<sup>-3</sup> TrCH2- TrCH4:</only>       |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>>tf0/tf0,1 >>>>rlcSize >>>>sizeType >>>>logicalChannelList >>ULTrCH-Id  >dch-QualityTarget >>bler-QualityValue  TrCH INFORMATION, COMMON   | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup> TrCH2: Absent | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup> TrCH2: Absent | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One All TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4  TrCH2- TrCH4: Absent</only>                         |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>tf0/tf0,1 >>>>rlcSize >>>>sizeType >>>>logicalChannelList >>ULTrCH-Id  >dch-QualityTarget >>bler-QualityValue  TrCH INFORMATION, COMMON ul-CommonTransChInfo >tfcs-ID (TDD only)   | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup> TrCH2: Absent | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup> TrCH2: Absent | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One All TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4  TrCH2- TrCH4: Absent</only>                         |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>tf0/tf0,1 >>>>rlcSize >>>>sizeType >>>>logicalChannelList >>ULTrCH-Id  >dch-QualityTarget >>bler-QualityValue  TrCH INFORMATION, COMMON ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator                               | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup> TrCH2: Absent | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup> TrCH2: Absent | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One All TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4  TrCH2- TrCH4: Absent</only>                         |
| TransportChannelIdentity (should be as for UL) >tfs-SignallingMode  >>transportFormatSet  >>>dynamicTF-information >>>tf0/tf0,1 >>>rlcSize >>>sizeType >>>numberOfTbSizeList >>>logicalChannelList >>ULTrCH-Id  >dch-QualityTarget >>bler-QualityValue  TrCH INFORMATION, COMMON ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup> TrCH2: Absent | SameAsUL  TrCH1: 1, TrCH2: 2  TrCH1: 1x10 <sup>-2</sup> TrCH2: Absent | Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""> DedicatedTransChT FS  TrCH1: (1x0) bitMode TrCH1: type 1: 0 TrCH1: One All TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4  TrCH2- TrCH4: Absent</only>                         |

| Configuration               | 28.8 kbps<br>streaming CS-<br>data + | 57.6 kbps<br>streaming CS-<br>data + | 12.2/7.95/5.9/4.75<br>kbps speech +<br>3.4 kbps signalling |
|-----------------------------|--------------------------------------|--------------------------------------|--|
|                             | 3.4 kbps signalling                  | 3.4 kbps signalling                  | 3.4 Kops signalling  |
| >>explicitTFCS-             | Complete                             | Complete                             | Complete   |
| ConfigurationMode           | 04.45                                | 0// 45"                              | 044 000  |
| >>>ctfcSize                 | Ctfc4Bit                             | Ctfc4Bit                             | Ctfc8Bit   |
| >>>TFCS representation      | Addition                             | Addition                             | Addition   |
| >>>>TFCS list               | (TF0, TF0)                           | (TF0, TF0)                           | (TF0, TF0, TF0,  |
| 7777711 03 1                | (11 0, 11 0)                         | (11 0, 11 0)                         | TF0)   |
| >>>>>ctfc                   | 0                                    | 0                                    | 0  |
| >>>>>gainFactorInform       | Computed                             | Computed                             | Computed   |
| ation                       | 0                                    | 0                                    | 0  |
| >>>>>referenceTFCId         | (TF1, TF0)                           | (TF1, TF0)                           | (TF1, TF0, TF0,  |
| >>>>>1FO3 2                 | (161, 160)                           | (161, 160)                           | TF0)   |
| >>>>>ctfc                   | 1                                    | 1                                    | 1  |
| >>>>>gainFactorInform       | Computed                             | Computed                             | Computed   |
| ation                       | N1/A                                 | N1/A                                 | N1/A   |
| >>>>>βc (FDD only)          | N/A                                  | N/A                                  | N/A  |
| >>>>>βd                     | N/A                                  | N/A                                  | N/A  |
| >>>>>referenceTFCId         | 0                                    | 0                                    | 0  |
| >>>>TFCS 3                  | (TF2, TF0)                           | (TF2, TF0)                           | (TF2, TF1, TF0,<br>TF0)                                    |
| >>>>>ctfc                   | 2                                    | 2                                    | 8  |
| >>>>>gainFactorInform       | Computed                             | Computed                             | Computed   |
| >>>>>referenceTFCId         | 0                                    | 0                                    | 0  |
| >>>>TFCS 4                  | (TF0, TF1)                           | (TF3, TF0)                           | (TF3, TF2, TF0,  |
| _                           |                                      |                                      | TF0)   |
| >>>>>ctfc                   | 3                                    | 3                                    | 15   |
| >>>>>gainFactorInform ation | Computed                             | Computed                             | Computed   |
| >>>>>βc (FDD only)          | N/A                                  | N/A                                  | N/A  |
| >>>>>βd                     | N/A                                  | N/A                                  | N/A  |
| >>>>>referenceTFCId         | 0                                    | 0                                    | 0  |
| >>>>>TFCS 5                 | (TF1, TF1)                           | (TF4, TF0)                           | (TF4, TF3, TF0, TF0)                                       |
| >>>>>ctfc                   | 4                                    | 4                                    | 22   |
| >>>>>gainFactorInform ation | Computed                             | Computed                             | Computed   |
| >>>>>referenceTFCId         | 0                                    | 0                                    | 0  |
| >>>>TFCS 6                  | (TF2, TF1)                           | (TF0, TF1)                           | (TF5, TF4, TF1,<br>TF0)                                    |
| >>>>>ctfc                   | 5                                    | 5                                    | 59   |
| >>>>>gainFactorInform ation | Signalled                            | Computed                             | Computed   |
| >>>>>βc (FDD only)          | 8                                    | N/A                                  | N/A  |
| >>>>>βd                     | 15                                   | N/A                                  | N/A  |
| >>>>>>referenceTFCId        | 0                                    | 0                                    | 0  |
| >>>>TFCS 7                  |                                      | (TF1, TF1)                           | (TF0,TF0,TF0,TF1)  |
| >>>>>ctfc                   |                                      | 6                                    | 60   |
| >>>>>gainFactorInform ation |                                      | Computed                             | Computed   |
| >>>>>referenceTFCId         |                                      | 0                                    | 0  |
| >>>>TFCS 8                  |                                      | (TF2, TF1)                           | (TF1,TF0,TF0,TF1)  |
| >>>>>ctfc                   |                                      | 7                                    | 61   |
| >>>>>gainFactorInform ation |                                      | Computed                             | Computed   |
| >>>>>referenceTFCId         |                                      | 0                                    | 0  |
| >>>>TFCS 9                  |                                      | (TF3, TF1)                           | (TF2,TF1,TF0,TF1)  |
| >>>>>ctfc                   |                                      | 8                                    | 68   |

| Configuration                        | 28.8 kbps<br>streaming CS-<br>data + | 57.6 kbps<br>streaming CS-<br>data + | 12.2/7.95/5.9/4.75<br>kbps speech +<br>3.4 kbps signalling |
|--------------------------------------|--------------------------------------|--------------------------------------|--|
|                                      | 3.4 kbps signalling                  | 3.4 kbps signalling                  | 3.4 kops signalling  |
| >>>>>gainFactorInform ation          | . 5                                  | Computed                             | Computed   |
| >>>>>>referenceTFCId                 |                                      | 0                                    | 0  |
| >>>>TFCS 10                          |                                      | (TF4, TF1)                           | (TF3,TF2,TF0,TF1)  |
| >>>>>ctfc                            |                                      | 9                                    | 75   |
| >>>>>gainFactorInform ation          |                                      | Signalled                            | Computed   |
| >>>>>βc (FDD only)                   |                                      | 8                                    | N/A  |
| >>>>>βd                              |                                      | 15                                   | N/A  |
| >>>>>>referenceTFCld                 |                                      | 0                                    | 0  |
| >>>>TFCS 11                          |                                      |                                      | (TF4,TF3,TF0,TF1)  |
| >>>>>ctfc                            |                                      |                                      | 82   |
| >>>>>gainFactorInform ation          |                                      |                                      | Computed   |
| >>>>>referenceTFCId                  |                                      |                                      | 0  |
| >>>>TFCS 12                          |                                      |                                      | (TF5,TF4,TF1,TF1)  |
| >>>>>ctfc                            |                                      |                                      | 119  |
| >>>>>gainFactorInform ation          |                                      |                                      | Signalled  |
| >>>>>βc (FDD only)                   |                                      |                                      | 11   |
| >>>>>βd                              |                                      |                                      | 15   |
| >>>>>referenceTFCId                  |                                      |                                      | 0  |
| dl-CommonTransChInfo                 |                                      |                                      |  |
| >tfcs-SignallingMode                 | Same as UL                           | Same as UL                           | Same as UL   |
| PhyCH INFORMATION FDD                |                                      |                                      |  |
| UL-DPCH-InfoPredef                   |                                      |                                      |  |
| >ul-DPCH-                            |                                      |                                      |  |
| PowerControlInfo                     |                                      |                                      |  |
| >>powerControlAlgorithm              | Algorithm 1                          | Algorithm 1                          | Algorithm 1  |
| >>>tpcStepSize                       | 1 dB                                 | 1 dB                                 | 1 dB   |
| >tfci-Existence                      | TRUE                                 | TRUE                                 | TRUE   |
| >puncturingLimit                     | 1                                    | 1                                    | 0.88   |
| DL-<br>CommonInformationPrede<br>f   |                                      |                                      |  |
| >dl-DPCH-InfoCommon                  |                                      |                                      |  |
| >>spreadingFactor                    | 64                                   | 32                                   | 128  |
| >>tfci-Existence                     | TRUE                                 | TRUE                                 | FALSE  |
| >>pilotBits                          | 8                                    | 8                                    | 4  |
| >>positionFixed                      | Flexible                             | Flexible                             | Fixed  |
| PhyCH INFORMATION 3.84/7.68 Mcps TDD |                                      |                                      |  |
| UL-DPCH-InfoPredef                   |                                      |                                      |  |
| >ul-DPCH-<br>PowerControlInfo        |                                      |                                      |  |
| >>dpch-ConstantValue                 | 0                                    | 0                                    | 0  |
| >commonTimeslotInfo                  |                                      |                                      |  |
| >>secondInterleavingMod              | frameRelated                         | frameRelated                         | frameRelated   |
| e<br>>>tfci-Coding                   | 16                                   | 16                                   | 16   |
| >>puncturingLimit                    | 0.44                                 | 0.48                                 | 0.88   |
| >>repetitionPeriodAndLen<br>gth      | repetitionPeriod1                    | repetitionPeriod1                    | repetitionPeriod1  |
| DL-<br>CommonInformationPrede<br>f   |                                      |                                      |  |
| >dl-DPCH-InfoCommon                  |                                      |                                      |  |
| >>commonTimeslotInfo                 |                                      |                                      |  |

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| Configuration                      | 28.8 kbps<br>streaming CS-<br>data +<br>3.4 kbps signalling | 57.6 kbps<br>streaming CS-<br>data +<br>3.4 kbps signalling | 12.2/7.95/5.9/4.75<br>kbps speech +<br>3.4 kbps signalling |
|------------------------------------|---|---|--|
| >>>secondInterleavingMo de         | frameRelated  | frameRelated  | frameRelated   |
| >>>tfci-Coding                     | 16  | 16  | 16   |
| >>>puncturingLimit                 | 0.44  | 0.48  | 0.92   |
| >>>repetitionPeriodAndLe ngth      | repetitionPeriod1   | repetitionPeriod1   | repetitionPeriod1  |
| PhyCH INFORMATION<br>1.28 Mcps TDD |   |   |  |
| UL-DPCH-InfoPredef                 |   |   |  |
| >commonTimeslotInfo                |   |   |  |
| >>secondInterleavingMod e          | frameRelated  | frameRelated  |  |
| >>tfci-Coding                      | 16  | 16  |  |
| >>puncturingLimit                  | 0.64  | 0.72  |  |
| >>repetitionPeriodAndLen gth       | repetitionPeriod1   | repetitionPeriod1   |  |
| DL-<br>CommonInformationPrede<br>f |   |   |  |
| >dl-DPCH-InfoCommon                |   |   |  |
| >>commonTimeslotInfo               |   |   |  |
| >>>secondInterleavingMo de         | frameRelated  | frameRelated  | frameRelated   |
| >>>tfci-Coding                     | 16  | 16  | 16   |
| >>>puncturingLimit                 | 0.64  | 0.72  | 0.92   |
| >>>repetitionPeriodAndLe ngth      | repetitionPeriod1   | repetitionPeriod1   | repetitionPeriod1  |

| No.    | Configuration            | 10.2/6.7/5.9/4.75                 | 7.4/6.7/5.9/4.75                     |
|--|--------------------------|-----------------------------------|--------------------------------------|
| Ref 34.108   | Comiguration             | kbps speech + 3.4 kbps signalling | kbps speech +<br>3.4 kbps signalling |
| Default configuration identity   |                          | + 0.10 Kbp3 OKb#3                 | + 0.10 Kbp3 OKB#0                    |
| Identity   |                          | 5a                                |                                      |
| RB1: 1, RB2: 2, RB3: 3, RB5: 5, RB6: 6, RB7: 7, RB6: 6, RB7: MM RB2- RB3: AM RB2- RB3: AM RB2- RB3: AM RB2- RB3: AND   | identity                 | 11                                | 12                                   |
| ric-InfoChoice   |                          |                                   |                                      |
| RB6: 6, RB7: 7, RB3: 8   RIc-info   RIc-info   RIc-info   RIc-info   RIc-info   RIc-info   RB1: UM   RB2- RB3: AM   RB5- RB6: TM   RB5- RB7: TM   RB5- RB6: TM   RB5- RB6: TM   RB1: WA   RB1: WA   RB1: WA   RB1: WA   RB2- RB3: NODiscard   NoDiscard   NoDiscard   NoDiscard   RB5- RB7: N/A   RB5- RB6: N/A   RB5- RB6: N/A   RB5- RB6: N/A   RB5- RB7: N/A   RB5- RB6:    | rb-Identity              |                                   |                                      |
| >vul-RLC-Mode         RB1: UM<br>RB2-RB3: AM<br>RB5-RB7: TM         RB1: UM<br>RB2-RB3: AM<br>RB5-RB6: TM           >>transmissionRLC-<br>DiscardMode         RB1: N/A<br>RB2-RB3: N/A<br>RB2-RB3: N/A<br>RB5-RB6: N/A         RB1: N/A<br>RB2-RB3: N/A<br>RB5-RB6: N/A           >>>maxDat         RB1: N/A<br>RB5-RB7: N/A<br>RB5-RB6: N/A         RB5-RB6: N/A<br>RB5-RB6: N/A           >>>transmissionWindowSize         RB1: N/A<br>RB2-RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5-RB7: N/A         RB1: N/A<br>RB2-RB3: 288 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5-RB6: N/A           >>timerRST         RB1: N/A<br>RB2-RB3: 300<br>RB5-RB7: N/A         RB1: N/A<br>RB2-RB3: 300<br>RB5-RB6: N/A           >>max-RST         RB1: N/A<br>RB2-RB3: 1<br>RB5-RB7: N/A         RB1: N/A<br>RB2-RB3: 3           >>pollingInfo         RB1: N/A<br>RB2-RB3: as below<br>RB5-RB7: N/A         RB2-RB3: as below<br>RB5-RB6: N/A           >>>lastTransmissionPDU-Poll         RB2-RB3: FALSE         RB2-RB3: FALSE           >>timerPollPeriodic         RB2-RB3: GA         RB2-RB3: GA           >>=         RB1: RB3: N/A<br>RB3: RB3: N/A<br>RB5-RB6: RB7: M/A         RB1: DM<br>RB1: N/A<br>RB2-RB3: AM<br>RB5-RB6: FALSE           >>dl-RLC-Mode         RB1: N/A<br>RB2-RB3: AM<br>RB3: TM         RB1: DM<br>RB2-RB3: TRUE<br>RB3-RB3: TRUE<br>RB5-RB6: TM         RB1: N/A<br>RB2-RB3: TRUE<br>RB5-RB7: N/A         RB1: N/A<br>RB2-RB3: TRUE<br>RB5-RB7: N/A           >>inSequenceDelivery         RB1: N/A<br>RB2-RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" a  |                          | RB6: 6, RB7: 7,                   |                                      |
| >>transmissionRLC- DiscardMode   RB1: N/A   RB1: N/A   RB1: N/A   RB5-RB6: TM  |                          |                                   |                                      |
| >>transmissionRLC-DiscardMode         RB1: N/A RB2- RB3: NA RB2- RB3: NODiscard NoDiscard RB5- RB7: N/A RB5- RB6: N/A RB1: N/A RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5- RB7: N/A RB5- RB6: N/A RB1: N/A RB2- RB3: 300 RB5- RB7: N/A RB5- RB6: N/A RB1: N/A RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5- RB7: N/A RB5- RB6: N/A RB1: N/A RB2- RB3: 300 RB5- RB7: N/A RB5- RB6: N/A RB1: N/A RB5- RB6: N/A RB1: N/A RB5- RB7: N/A RB5- RB6: N/A RB5- RB7: N/A RB5- RB7: N/A RB5- RB6: N/A RB5- RB7: N/A RB5- RB6: N/A RB5- RB7: N/A RB5- RB7: N/A RB5- RB6: N/A RB5- RB7: N/A RB5- RB3: 300 RB2- RB3: 300 RB3- RB3: N/A RB3- RB3: N/                                 | >ul-RLC-Mode             | RB2- RB3: AM                      | RB2- RB3: AM                         |
| DiscardMode  | >>transmissionRLC-       |                                   |                                      |
| RB5- RB7: N/A   RB5- RB6: N/A   RB1: N/A   RB1: N/A   RB2- RB3: 15   RB2- RB3: 15   RB2- RB3: 15   RB5- RB7: N/A   RB1: N/A   RB2- RB3: 15   RB5- RB7: N/A   RB5- RB6: N/A   RB2- RB3: 15   RB5- RB7: N/A   RB5- RB6: N/A   RB2- RB3: 128 for   UEs with more than   10 kbyte "total RLC   AM buffer size" and   32 otherwise   RB5- RB7: N/A   RB5- RB6: N/A   RB2- RB3: 300   RB5- RB7: N/A   RB2- RB3: 300   RB5- RB7: N/A   RB5- RB6: N/A   RB2- RB3: 300   RB5- RB7: N/A   RB5- RB6: N/A   RB2- RB3: 300   RB5- RB7: N/A   RB3- RB6: N/A   RB2- RB3: 300   RB3- RB3: N/A   RB3- RB6: RB3: RB3- RB6: RB3: RB3: RB3- RB6: RB3: RB3- RB3- RB3: RB3- RB3: RB3- RB3: RB3- RB3: RB3- RB3: RB3- RB3- RB3- RB3- RB3- RB3- RB3- RB3-   |                          |                                   |                                      |
| >>>maxDat  |                          |                                   |                                      |
| RB2- RB3: 15   RB5- RB6: N/A   RB5- RB6: N/A   RB5- RB7: N/A   RB5- RB6: N/A   RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5- RB7: N/A   RB5- RB6: N/A   RB5- RB6: N/A   RB5- RB7: N/A   RB5- RB6: N/A   RB5- RB7: N/A   RB5   | mayDat                   |                                   |                                      |
| RB5- RB7: N/A   RB5- RB6: N/A  | >>>maxDat                | •                                 | •                                    |
| >>transmissionWindowSiz e RB1: N/A RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5- RB7: N/A RB2- RB3: 320 therwise RB5- RB7: N/A RB1: N/A RB1: N/A RB2- RB3: 300 RB5- RB6: N/A RB2- RB3: 300 RB5- RB7: N/A RB1: N/A RB1: N/A RB1: N/A RB2- RB3: 1 RB5- RB7: N/A RB1: N/A RB2- RB3: as below RB5- RB7: N/A RB5- RB6: N/A RB5- RB7: N/A RB5- RB6: N/A RB5- RB7: N/A RB5- RB7: N/A RB5- RB6: RB3: N/A RB5- RB7: N/A RB5- RB7: N/A RB5- RB6: RB3: N/A RB5- RB6: RB3: N/A RB5- RB7: N/A RB5- RB6: RB3: N/A RB5- RB6: RB7: N/A RB5- RB8: N/A RB5- RB7: N/A RB5- RB3: 100 RB2- RB3: 100 RB2- RB3: 100 RB2- RB3: 100 RB2- RB3: FALSE RB |                          |                                   |                                      |
| UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5- RB7: N/A RB1: N/A RB2- RB3: 300 RB5- RB7: N/A RB1: N/A RB2- RB3: 300 RB5- RB7: N/A RB1: N/A RB1: N/A RB2- RB3: 1 RB5- RB7: N/A RB1: N/A RB1: N/A RB2- RB3: 1 RB5- RB6: N/A RB1: N/A RB1: N/A RB2- RB3: 1 RB5- RB7: N/A RB1: N/A RB1: N/A RB2- RB3: 1 RB5- RB6: N/A RB1: N/A RB1: N/A RB2- RB3: 1 RB5- RB7: N/A RB1: N/A RB1: N/A RB2- RB3: 1 RB5- RB6: N/A RB1: N/A RB1: N/A RB2- RB3: 35 below RB5- RB7: N/A RB1: N/A RB2- RB3: FALSE RB3- RB6: N/A RB1- RB3: N/A RB2- RB3: TNUE RB3- RB6- RB6- RB6- RB6- RB6- RB6- RB6- RB6   | >>transmissionWindowSiz  |                                   | RB1: N/A                             |
| 10 kbyte "total RLC  | е                        |                                   |                                      |
| AM buffer size" and 32 otherwise RB5- RB6: RN/A RB5- RB6: N/A  >>timerRST  RB1: N/A RB2- RB3: 300 RB5- RB7: N/A RB1: N/A RB2- RB3: 300 RB5- RB7: N/A RB5- RB6: N/A  >>max-RST  RB1: N/A RB2- RB3: 1 RB5- RB6: N/A  RB1: N/A RB2- RB3: 1 RB5- RB6: N/A  >>pollingInfo  RB1: N/A RB2- RB3: as below RB5- RB7: N/A RB5- RB6: N/A  >>pollingInfo  RB1: N/A RB2- RB3: as below RB5- RB7: N/A RB5- RB6: N/A  >>lastTransmissionPDU- Poll  >>>lastRetransmissionPD U-Poll  >>>timerPollPeriodic  RB2- RB3: 300 RB2- RB3: FALSE  >>lastRetransmissionPD U-Poll  >>>timerPollPeriodic  RB1: RB3: N/A RB5- RB6: FALSE  >dI-RLC-Mode  RB1: UM RB2- RB3: AM RB5- RB6: FALSE  >dI-RLC-Mode  RB1: UM RB2- RB3: AM RB5- RB6: FALSE  >dI-RLC-Mode  RB1: UM RB2- RB3: TM RB5- RB6: TM RB5- RB7: TM RB5- RB6: TM RB5- RB7: TM RB5- RB6: TM RB5- RB7: TM RB5- RB7: TM RB5- RB6: TM RB5- RB6: TM RB1: N/A RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5- RB8: N/A RB5- RB7: N/A RB1: N/A RB2- RB3: as below RB5- RB8: N/A RB5- RB7: N/A RB1: N/A RB1: N/A RB2- RB3: as below RB5- RB7: N/A RB1: N/A RB1: N/A RB1: N/A RB2- RB3: as below RB5- RB7: N/A RB1: N/A RB1: N/A RB1: N/A RB1: N/A RB2- RB3: as below RB5- RB7: N/A RB5- RB7: N/ |                          |                                   |                                      |
| 32 otherwise   |                          |                                   |                                      |
| >>timerRST         RB1: N/A<br>RB2- RB3: 300<br>RB5- RB7: N/A         RB1: N/A<br>RB2- RB3: 300<br>RB5- RB6: N/A           >>max-RST         RB1: N/A<br>RB1: N/A<br>RB2- RB3: 1<br>RB5- RB7: N/A<br>RB2- RB3: 1<br>RB5- RB7: N/A         RB1: N/A<br>RB2- RB3: 1<br>RB5- RB6: N/A           >>pollingInfo         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB6: N/A           >>>lastTransmissionPDU-<br>Poll         RB2- RB3: FALSE         RB2- RB3: FALSE           >>>lastRetransmissionPD<br>U-Poll         RB2- RB3: FALSE         RB2- RB3: FALSE           >>>lastRetransmissionPD<br>U-Poll         RB2- RB3: AM<br>RB2- RB3: AM<br>RB5- RB7: FALSE         RB2- RB3: AM<br>RB1- RB3: N/A<br>RB1- RB3: N/A<br>RB1- RB3: N/A<br>RB5- RB6: FALSE           >dI-RLC-Mode         RB1: UM<br>RB2- RB3: AM<br>RB5- RB7: TM<br>RB3: TM         RB1: UM<br>RB2- RB3: AM<br>RB5- RB6: TM         RB1: N/A<br>RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB8: N/A         RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB7: N/A           >>receivingWindowSize         RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>0 M buffer size" and<br>32 otherwise<br>RB5- RB8: N/A         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A           >>dI-RLC-StatusInfo         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB8: N/A         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A           >>timerStatusProhibit         RB2- RB3: FALSE         RB2- RB3: FALSE           RB2- RB3: FALSE         RB2- RB3: TALSE   |                          |                                   |                                      |
| RB2- RB3: 300  |                          |                                   |                                      |
| RB5- RB7: N/A   RB5- RB6: N/A   RB1: N/A   RB2- RB3: 1   RB5- RB7: N/A   RB2- RB3: 1   RB5- RB7: N/A   RB5- RB6: N/A   RB5- RB7: N/A   RB5- RB6: FALSE   RB2- RB3: AM   RB5- RB7: FALSE   RB5- RB6: FALSE   RB5- RB6: FALSE   RB5- RB6: FALSE   RB5- RB6: TM   RB5- RB7: TM   RB5- RB6: TM   RB5- RB6: TM   RB7: TM   RB5- RB6: TM   RB5- RB7: N/A   RB5- RB3: as below   RB5- RB8: N/A   RB5- RB7: N/A      | >>timerRST               |                                   |                                      |
| >>max-RST         RB1: N/A<br>RB2- RB3: 1<br>RB5- RB7: N/A         RB1: N/A<br>RB2- RB3: 1<br>RB5- RB6: N/A           >>pollingInfo         RB1: N/A<br>RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB6: N/A           >>>lastTransmissionPDU-<br>Poll         RB2- RB3: FALSE         RB2- RB3: FALSE           >>>lastRetransmissionPD<br>U-Poll         RB2- RB3: FALSE         RB2- RB3: FALSE           >>>timerPollPeriodic         RB2- RB3: 300         RB2- RB3: 300           >>segmentationIndication         RB1- RB3: N/A<br>RB5- RB7: FALSE         RB5- RB6: FALSE           >dI-RLC-Mode         RB1: UM<br>RB2- RB3: AM<br>RB5- RB7: TM         RB1: UM<br>RB2- RB3: AM<br>RB5- RB6: TM           >>inSequenceDelivery         RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB8: N/A         RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB7: N/A           >>receivingWindowSize         RB1: N/A<br>RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5- RB8: N/A         RB1: N/A<br>RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5- RB7: N/A           >>dI-RLC-StatusInfo         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A           >>>timerStatusProhibit         RB2- RB3: 100         RB2- RB3: FALSE  |                          |                                   |                                      |
| RB2- RB3: 1   RB5- RB6: N/A   RB5- RB6: N/A  | >>max-RST                |                                   |                                      |
| >>pollingInfo         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB6: N/A           >>>lastTransmissionPDU-<br>Poll         RB2- RB3: FALSE         RB2- RB3: FALSE           >>>lastRetransmissionPD<br>U-Poll         RB2- RB3: FALSE         RB2- RB3: FALSE           >>>timerPollPeriodic         RB2- RB3: 300         RB2- RB3: 300           >>segmentationIndication         RB1- RB3: N/A<br>RB5- RB7: FALSE         RB1- RB3: N/A<br>RB5- RB6: FALSE           >dI-RLC-Mode         RB1: UM<br>RB2- RB3: AM<br>RB5- RB7: TM<br>RB3: TM         RB1: UM<br>RB2- RB3: AM<br>RB5- RB6: TM           >>inSequenceDelivery         RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB8: N/A         RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB7: N/A           >>receivingWindowSize         RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5- RB8: N/A         RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5- RB7: N/A           >>dI-RLC-StatusInfo         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB8: N/A         RB2- RB3: as below<br>RB5- RB7: N/A           >>stimerStatusProhibit         RB2- RB3: FALSE         RB2- RB3: FALSE           >>missingPDU-Indicator         RB2- RB3: FALSE         RB2- RB3: FALSE   |                          | RB2- RB3: 1                       | RB2- RB3: 1                          |
| RB2- RB3: as below RB5- RB6: N/A   |                          |                                   |                                      |
| RB5- RB7: N/A   RB5- RB6: N/A  | >>pollingInfo            | · ·                               |                                      |
| Poll   |                          |                                   |                                      |
| U-Poll   | <b>5</b> "               |                                   | RB2- RB3: FALSE                      |
| >>segmentationIndication         RB1- RB3: N/A RB5- RB7: FALSE         RB1- RB3: N/A RB5- RB6: FALSE           >dI-RLC-Mode         RB1: UM RB2- RB3: AM RB2- RB3: AM RB5- RB7: TM RB5- RB6: TM RB5- RB7: TM RB5- RB6: TM RB7: TM  | U-Poll                   |                                   |                                      |
| RB5- RB7: FALSE   RB5- RB6: FALSE  |                          |                                   |                                      |
| >dl-RLC-Mode         RB1: UM<br>RB2- RB3: AM<br>RB5- RB7: TM<br>RB5- RB6: TM<br>RB8: TM         RB1: UM<br>RB5- RB6: TM<br>RB5- RB6: TM<br>RB7: TM           >>inSequenceDelivery         RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB8: N/A         RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB8: N/A         RB1: N/A<br>RB5- RB7: N/A           >>receivingWindowSize         RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5- RB8: N/A         RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5- RB8: N/A           >>dl-RLC-StatusInfo         RB1: N/A<br>RB1: N/A<br>RB2- RB3: as below<br>RB5- RB8: N/A         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A           >>>timerStatusProhibit         RB2- RB3: 100         RB2- RB3: FALSE           RB2- RB3: FALSE         RB2- RB3: FALSE   | >>segmentationindication |                                   |                                      |
| RB5- RB7: TM   RB5- RB6: TM   RB8: TM   RB7: TM   RB7: TM   RB1: N/A   RB2- RB3: TRUE   RB5- RB8: N/A   RB5- RB7: N/A   RB5- RB7: N/A   RB5- RB7: N/A   RB1: N/A   RB2- RB3: 128 for   UEs with more than   10 kbyte "total RLC   AM buffer size" and   32 otherwise   RB5- RB8: N/A   RB5- RB7: N/A   RB5-    | >dl-RLC-Mode             | RB1: UM                           | RB1: UM                              |
| RB8: TM   RB7: TM  |                          | -                                 | -                                    |
| >>inSequenceDelivery         RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB8: N/A         RB1: N/A<br>RB2- RB3: TRUE<br>RB5- RB7: N/A           >>receivingWindowSize         RB1: N/A<br>RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5- RB8: N/A         RB2- RB3: 128 for<br>UEs with more than<br>10 kbyte "total RLC<br>AM buffer size" and<br>32 otherwise<br>RB5- RB8: N/A           >>dI-RLC-StatusInfo         RB1: N/A<br>RB1: N/A<br>RB2- RB3: as below<br>RB5- RB8: N/A         RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A           >>>timerStatusProhibit         RB2- RB3: 100         RB2- RB3: FALSE           RB2- RB3: FALSE         RB2- RB3: FALSE  |                          | _                                 |                                      |
| RB2- RB3: TRUE   RB5- RB7: N/A   RB5- RB7: N/A   | >>inSequenceDelivery     |                                   |                                      |
| >>receivingWindowSize  RB1: N/A RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5- RB8: N/A RB5- RB7: N/A  >>dl-RLC-StatusInfo  RB1: N/A RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5- RB8: N/A RB5- RB7: N/A RB1: N/A RB2- RB3: as below RB5- RB8: N/A RB5- RB7: N/A  >>>timerStatusProhibit RB2- RB3: 100 RB2- RB3: FALSE RB2- RB3: FALSE   |                          | RB2- RB3: TRUE                    | RB2- RB3: TRUE                       |
| RB2- RB3: 128 for UEs with more than 10 kbyte "total RLC AM buffer size" and 32 otherwise RB5- RB8: N/A RB1: N/A RB1: N/A RB2- RB3: as below RB5- RB8: N/A RB5- RB7: N/A   | >>receivingWindowSize    |                                   |                                      |
| 10 kbyte "total RLC  |                          | · ·                               | ·                                    |
| AM buffer size" and 32 otherwise RB5- RB8: N/A RB1: N/A RB1: N/A RB2- RB3: as below RB5- RB7: N/A RB5- RB7: N/A RB5- RB7: N/A RB5- RB8: N/A RB5- RB7: RB7- RB7: RB7- RB7- RB7- RB7- RB7- RB7- RB7- RB7-  |                          |                                   |                                      |
| 32 otherwise RB5- RB8: N/A RB5- RB7: N/A RB1: N/A RB1: N/A RB2- RB3: as below RB5- RB8: N/A RB5- RB7: N/A RB5- RB8: N/A RB5- RB7: N/A RB5- RB7: N/A RB5- RB7: N/A RB5- RB3: 100 RB2- RB3: FALSE RB2- RB3: FALSE  |                          |                                   |                                      |
| RB5- RB8: N/A   RB5- RB7: N/A   Solid RB1: N/A   RB1: N/A   RB1: N/A   RB2- RB3: as below   RB5- RB8: N/A   RB5- RB7: N/A   RB5- RB7: N/A   RB5- RB7: N/A   RB5- RB3: 100   RB2- RB3: 100   RB2- RB3: FALSE   RB2- RB3: FALSE   RB2- RB3: FALSE   RB2- RB3: FALSE   RB3- RB3- RB3- RB3- RB3- RB3- RB3- RB3-  |                          |                                   |                                      |
| RB2- RB3: as below RB5- RB8: N/A       RB5- RB7: N/A         >>>timerStatusProhibit       RB2- RB3: 100       RB2- RB3: 100         >>>missingPDU-Indicator       RB2- RB3: FALSE       RB2- RB3: FALSE  |                          |                                   |                                      |
| RB5- RB8: N/A         RB5- RB7: N/A           >>>timerStatusProhibit         RB2- RB3: 100         RB2- RB3: 100           >>>missingPDU-Indicator         RB2- RB3: FALSE         RB2- RB3: FALSE   | >>dl-RLC-StatusInfo      |                                   | ·                                    |
| >>>timerStatusProhibit RB2- RB3: 100 RB2- RB3: 100 >>>missingPDU-Indicator RB2- RB3: FALSE RB2- RB3: FALSE   |                          |                                   |                                      |
| >>>missingPDU-Indicator RB2- RB3: FALSE RB2- RB3: FALSE  | >>>timerStatusProhibit   |                                   |                                      |
|  |                          |                                   |                                      |
|  |                          |                                   |                                      |

| RB5- RB8: FALSE   RB5- RB7: FALSE   rb-MappingInfo   |                                       | Ī                       | T                       |
|--|---------------------------------------|-------------------------|-------------------------|
| D-MappingInfo   D-MappingInf   | >>segmentationIndication              | RB1- RB3: N/A           | RB1- RB3: N/A           |
| Dch  | ule NA in lorf -                      | RB5- RB8: FALSE         | RB5- RB7: FALSE         |
| Doch   |                                       | On all a signal Channal | On all a signal Channal |
| Dch   Dch   Dch   Dch   TransportChannelItype  | · -                                   | OneLogicalChannel       | OneLogicalChannel       |
| TransportChannelIdentity   |                                       | Deh                     | Deh                     |
| >>>transportChannelIdentity         RB1- RB3: 4 RB5: 1, RB6: 2, RB7: 3, RB5: 1, RB6: 2 RB7: 3, RB5: 1, RB6: 2 RB7: 3, RB5: 1, RB6: 2 RB7: 3, RB5: 1, RB2: 2, RB3: 3 RB5- RB7: N/A RB5- RB6: N/A RB5- RB6: N/A RB5- RB7: N/A RB5- RB6: N/A RB5- RB6: N/A RB5- RB7: N/A RB5- RB6: N/A RB5- RB7- RB6: N/A RB5- RB7- RB7- RB7- RB7- RB7- RB7- RB7- RB7   | · · · · · · · · · · · · · · · · · · · | Don                     | Don                     |
| Section  |                                       | RB1- RB3: 4             | RB1- RB3: 3             |
| RBF: 3,   RB1: 1, RB2: 2,   RB3: 3   RB5: RB6: N/A   RB5: RB6: RB6: N/A   RB5: RB6: RB6: N/A   RB1: RB3: RB3: RB3: RB6: RB6: RB6: RB6: RB6: RB6: RB6: RB6                      | •                                     |                         |                         |
| SologicalChannelIdentity   | •                                     |                         | ,                       |
| RB5- RB7: N/A   RB5- RB6: N/A   RB1- RB3: configured (RB5- RB7: N/A   RB5- RB6: S   RB5- RB7- M/A   RB5- RB7- RB7- M/A   RB5- RB7- RB7- M/A   RB5- RB7- RB7- RB7- M/A   RB5- RB7- RB7- RB7- RB7- RB7- RB7- RB7- RB7            | >>logicalChannelIdentity              | RB1: 1, RB2: 2,         |                         |
| Sortic-SizeList   RB1- RB3:  |                                       |                         |                         |
| Configured RB5-RB7: N/A RB5-RB6: S RB1: 1, RB2: 2, RB3: 3 RB5-RB6: 5 RB5-RB7: 5 RB5-RB6: 5 RB5-RB6: 5 RB5-RB7: 5 RB5-RB6: AB5-RB6: AB5-RB6   |                                       |                         |                         |
| RB5- RB7: N/A   RB5- RB6: N/A   RB1: 1, RB2: 2, RB1: 1, RB2: 2, RB5- RB6: 5   RB5- RB7- RB6: 1, RB6: 2, RB7- RB5- RB7- RB5- RB7- RB7- RB5- RB7- RB5- RB7- RB5- RB7- RB7- RB7- RB5- RB7- RB7- RB5- RB7- RB7- RB7- RB5- RB7- RB7- RB7- RB5- RB7- RB7- RB7- RB7- RB7- RB7- RB7- RB7   | >>rlc-SizeList                        | -                       | -                       |
| Section   Sect   |                                       |                         |                         |
| LogicalChannelPriority   | >>mac-                                |                         |                         |
| RB5- RB7: 5   RB5- RB6: 5  |                                       |                         |                         |
| DL-  | Logical Chairmon Hority               |                         |                         |
| >>Mapping option 1         One mapping option         One mapping option           >>>dI-<br>TransportChannelType         Dch           >>>>transportChannelIden<br>tity         RB1- RB3: 4<br>RB5: 1, RB6: 2,<br>RB7: 3, RB8: 5<br>RB7: 4         RB1- RB3: 3<br>RB5: 1, RB6: 2,<br>RB7: 4         RB5: 1, RB6: 2,<br>RB7: 4         RB5: 1, RB6: 2,<br>RB7: 4         RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB8: N/A         RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A           TrCH INFORMATION PER TrCH         TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 4         TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 4         TrCH1: 1, TrCH2: 2,<br>TrCH3: 3         TrCH1: 1, TrCH2: 2,<br>TrCH3: 3         TrCH1: (0x61)         DedicatedTransChT<br>FS         PedicatedTransChT<br>FS   | >DL-                                  |                         |                         |
| >>Mapping option 1         One mapping option         One mapping option           >>>dI-<br>TransportChannelType         Dch           >>>>transportChannelIden<br>tity         RB1- RB3: 4<br>RB5: 1, RB6: 2,<br>RB7: 3, RB8: 5<br>RB7: 4         RB1- RB3: 3<br>RB5: 1, RB6: 2,<br>RB7: 4         RB5: 1, RB6: 2,<br>RB7: 4         RB5: 1, RB6: 2,<br>RB7: 4         RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB8: N/A         RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A           TrCH INFORMATION PER TrCH         TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 4         TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 4         TrCH1: 1, TrCH2: 2,<br>TrCH3: 3         TrCH1: 1, TrCH2: 2,<br>TrCH3: 3         TrCH1: (0x61)         DedicatedTransChT<br>FS         PedicatedTransChT<br>FS   |                                       |                         |                         |
| >>>dl-<br>TransportChannelType         Dch         Dch           >>>>transportChannelIden<br>tity         RB1- RB3: 4<br>RB5: 1, RB6: 2,<br>RB7: 3, RB8: 5<br>RB7: 4         RB5: 1, RB6: 2,<br>RB7: 4         RB5: 1, RB6: 2,<br>RB7: 4         RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A           TrCH INFORMATION PER<br>TrCH         RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A         RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A         RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A           Juliant transport Channel type         dch         dch         dch           >transportChannelIdentity         TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 4<br>TrCH3: 3         TrCH1: 1, TrCH2: 2,<br>TrCH3: 3         TrCH1: 1, TrCH2: 2,<br>TrCH3: 3         DedicatedTransChT<br>FS           >>dynamicTF-information         TrCH1: (0x65)<br>TrCH2: (0x 99)<br>TrCH3: (0x 40,<br>1x40)<br>TrCH3: (0x 40,<br>1x44)         TrCH1: (0x61)<br>TrCH2: (0x 87)<br>TrCH3: (0x 40,<br>1x44)         TrCH1: (0x61)<br>TrCH2: (0x 87)<br>TrCH3: (0x 40,<br>1x144)           >>>>rlcSize         BitMode         BitMode         BitMode           >>>>sizeType         TrCH1: type 1: 65<br>TrCH2: type 1: 99<br>TrCH3: type 1: 99<br>TrCH3: 2: type 2,<br>part1= 2, part2= 0<br>(144)         TrCH1: type 1: 61<br>TrCH2: Zero<br>TrCH3: Zero, one           >>>>numberOfTbSizeList         TrCH1: (1x39)<br>TrCH2: (1x 53)<br>TrCH2: (1x 53)<br>TrCH3: TrCH4: N/A         TrCH1: (1x39)<br>TrCH2: (1x53)<br>TrCH3: N/A         TrCH1: (1x39)<br>TrCH2: (1x53)<br>TrCH2: 1: 39<br>TrCH1: 1: 39<br>TrCH1: 1: 39<br>TrCH1: 1: 39<br>TrCH1: 1: 39<br>TrCH1: 1: 39  |                                       | One mapping option      | One mapping option      |
| >>>>transportChannelIden tity RB1- RB3: 4 RB5: 1, RB6: 2, RB7: 1, RB6: 2, RB7: 1, RB6: 2, RB7: 1, RB2: 2, RB7: 1, RB2: 2, RB3: 3 RB5- RB8: N/A RB5- RB7: N/A RB5- RB5: N/A | >>>dl-                                |                         |                         |
| tity   |                                       |                         |                         |
| RB7: 3, RB8: 5   RB7:4   | -                                     |                         |                         |
| >>>logicalChannelIdentity RB1: 1, RB2: 2, RB3: 3 RB5- RB8: N/A RB5- RB7: N/A  TrCH INFORMATION PER TrCH  UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4 TrCH3: 3  >transportFormatSet DedicatedTransChT FS >>dynamicTF-information >>>tf0/tf0,1 TrCH1: (0x65) TrCH2: (0x 99) TrCH3: (0x 40, 1x40) TrCH4: (0x144, 1x144)  >>>>rlcSize BitMode BitMode >>>>sizeType TrCH4: 2, part1= 2, part2= 0 (144)  >>>>logicalChannelList All >>>t1 TrCH1: (1x39) TrCH3: N/A  TrCH3: (1x 53) TrCH4: (1x39) TrCH3: (1x 53) TrCH4: (1x 53) TrCH4: (1x 53) TrCH3: (1x 53) TrCH4: (1x 53) TrCH4: (1x 53) TrCH3: (1x 53) TrCH4: (1x 53) TrCH4: (1x 53) TrCH3: (1x 53) TrCH4: (1x 53) TrCH4 | tity                                  |                         |                         |
| RB3: 3   RB5- RB8: N/A   RB5- RB7: N/A   | >>> logical Channell dentity          |                         |                         |
| RB5- RB8: N/A   RB5- RB7: N/A   TrCH INFORMATION PER TrCH   UL-  | >>>logicalChannelidentity             |                         |                         |
| TrCH INFORMATION PER TrCH         UL- AddReconfTransChInfoList           >Uplink transport channel type         dch           >transportChannelIdentity         TrCH1: 1, TrCH2: 2, TrCH3: 3 TrCH3: 3, TrCH4: 4 TrCH3: 3, TrCH4: 4 TrCH3: 3         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x65) TrCH2: (0x 99) TrCH2: (0x 99) TrCH3: (0x 40, 1x44) TrCH4: (0x144, 1x144)         TrCH3: (0x 144, 1x144)           >>>>rlcSize         BitMode         BitMode           >>>>sizeType         TrCH1: type 1: 65 TrCH2: type 1: 99 TrCH3: type 1: 40 TrCH4: 2: type 2, part1= 2, part2= 0 (144)         TrCH1: type 1: 61 TrCH2: Zero TrCH3: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1: (1x39) TrCH2: (1x53) TrCH2: (1x53) TrCH3: TrCH4: N/A         TrCH1: (1x39) TrCH2: (1x53) TrCH3: TrCH4: N/A           >>>>numberOfTransportBl ocks         TrCH1: One TrCH2: One TrCH2: One TrCH2: BitMode         TrCH1: 1: 39 TrCH1: 1: 39 TrCH2: 1: 53         TrCH1: 1: 39 TrCH1: 1: 39 TrCH1: 1: 53  |                                       |                         |                         |
| TrCH   | TrCH INFORMATION PER                  | NDO NDO. N//            | KBO KBI. N//            |
| UL-   AddReconfTransChInfoList   >Uplink transport channel type   >transportChannelIdentity   TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4   TrCH3: 3   DedicatedTransChT FS   DedicatedTransChT FS   S>dynamicTF-information   >>>tf0/tf0,1   TrCH1: (0x65)   TrCH2: (0x 87)   TrCH3: (0x 40, 1x40)   TrCH4: (0x144, 1x144)   TrCH4: (0x144, 1x144)   TrCH4: (0x144, 1x144)   TrCH3: (0x 40, 1x40)   TrCH2: (1x40)   TrCH3: (1x40   |                                       |                         |                         |
| >Uplink transport channel type         dch         dch           >transportChannelIdentity         TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4         TrCH3: 3, TrCH4: 4         TrCH3: 3           >transportFormatSet         DedicatedTransChT FS         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x65)         TrCH1: (0x61)           >>>tf0/ tf0,1         TrCH2: (0x 99)         TrCH2: (0x 87)           TrCH3: (0x 40, 1x40)         TrCH3: (0x 144, 1x144)           TrCH4: (0x144, 1x144)         TrCH3: (0x 144, 1x144)           >>>>rlcSize         BitMode         BitMode           TrCH1: type 1: 65         TrCH1: type 1: 65         TrCH2: type 1: 99           TrCH3: type 1: 99         TrCH3: type 1: 40         TrCH3: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1-2: Zero         TrCH1: 2: part2= 0 (144)           >>>>logicalChannelList         All         All           >>>>tf 1         TrCH1: (1x39)         TrCH2: (1x53)         TrCH2: (1x53)           TrCH2: (1x 53)         TrCH3: N/A         TrCH3: N/A           >>>>numberOfTransportBl         TrCH1: One         TrCH2: One           >>>>s>>srlc-Size         TrCH1: 1: 39         TrCH1: 1: 39           TrCH1: 1: 53         TrCH1: 1: 53  |                                       |                         |                         |
| type         transportChannelIdentity         TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4         TrCH1: 1, TrCH2: 2, TrCH3: 3           >transportFormatSet         DedicatedTransChT FS         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x65)         TrCH1: (0x61)           >>>tf0/ tf0,1         TrCH2: (0x 99)         TrCH2: (0x 87)           TrCH3: (0x 40, 1x40)         TrCH3: (0x 144, 1x144)           TrCH4: (0x144, 1x144)         TrCH1: type 1: 65           TrCH2: type 1: 99         TrCH1: type 1: 65         TrCH2: type 1: 99           TrCH3: type 1: 40         TrCH3: type 1: 40         TrCH3: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1-2: Zero         TrCH1-2: Zero         TrCH3: Zero, one           >>>>logicalChannelList         All         All           >>>>numberOfTransportBl         TrCH1: (1x39)         TrCH1: (1x39)           TrCH2: (1x 53)         TrCH3: N/A         TrCH3: N/A           >>>>numberOfTransportBl         TrCH1: One         TrCH2: One           ocks         TrCH1-2: BitMode         TrCH1-2: BitMode           >>>>sizeType         TrCH1: 1: 39         TrCH1: 1: 39           TrCH1: 1: 53         TrCH1: 1: 53   | AddReconfTransChInfoList              |                         |                         |
| >transportChannelIdentity         TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 4         TrCH1: 1, TrCH2: 2, TrCH3: 3           >transportFormatSet         DedicatedTransChT FS         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x65)         TrCH1: (0x61)           >>>tf0/ tf0,1         TrCH1: (0x65)         TrCH2: (0x 87)           TrCH2: (0x 99)         TrCH2: (0x 87)         TrCH3: (0x 40, 1x44)           TrCH3: (0x 40, 1x44)         TrCH3: (0x 144, 1x144)         TrCH3: (0x 144, 1x144)           >>>>rlcSize         BitMode         BitMode         BitMode           >>>sizeType         TrCH1: type 1: 65         TrCH2: type 1: 99         TrCH2: type 1: 87           TrCH3: type 1: 40         TrCH3: type 1: 40         TrCH3: 2: type 2, part1= 2, part2= 0 (144)         TrCH3: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1-2: Zero         TrCH1: 1: X39         TrCH3: Zero, one           >>>>logicalChannelList         All         All         All           >>>>tf 1         TrCH1: (1x39)         TrCH2: (1x53)         TrCH2: (1x53)           TrCH3: TrCH4: N/A         TrCH2: (1x53)         TrCH2: (1x53)         TrCH2: One           >>>numberOfTransportBl ocks         TrCH1: 0ne         TrCH2: One         TrCH2: BitMode           >>>>sizeType         TrCH1: 1   |                                       | dch                     | dch                     |
| TrCH3: 3, TrCH4: 4   | >transportChannelIdentity             | TrCH1: 1, TrCH2: 2,     | TrCH1: 1, TrCH2: 2,     |
| >transportFormatSet         DedicatedTransChT FS         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x65) TrCH2: (0x 99) TrCH2: (0x 87) TrCH3: (0x 40, 1x40) TrCH4: (0x144, 1x144)         TrCH4: (0x144, 1x144)           >>>>rlcSize         BitMode         BitMode           >>>>sizeType         TrCH1: type 1: 65 TrCH2: type 1: 99 TrCH3: type 1: 40 TrCH3: 2: type 2, part1= 2, part2= 0 (144)         TrCH3: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1: (1x39) TrCH3: Zero TrCH3: Zero, one         TrCH3: Zero, one           >>>>logicalChannelList         All         All           >>>>tf 1         TrCH1: (1x39) TrCH2: (1x 53) TrCH2: (1x 53) TrCH3: N/A         TrCH3: N/A           >>>>numberOfTransportBl ocks         TrCH1: One TrCH1: One TrCH2: One         TrCH1: One TrCH2: BitMode           >>>>sizeType         TrCH1: 1: 39 TrCH1: 1: 39 TrCH1: 1: 39 TrCH1: 1: 53  | ,                                     |                         |                         |
| >>dynamicTF-information >>>tf0/tf0,1 TrCH1: (0x65) TrCH2: (0x 99) TrCH2: (0x 87) TrCH3: (0x 40, 1x40) TrCH4: (0x144, 1x144)  >>>>rlcSize BitMode BitMode  >>>>sizeType TrCH1: type 1: 65 TrCH1: type 1: 65 TrCH2: type 1: 99 TrCH3: type 1: 40 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>logicalChannelList All >>>t1  TrCH1: (1x39) TrCH2: (1x 53) TrCH2: (1x 53) TrCH3: N/A  >>>numberOfTransportBl ocks TrCH1: One TrCH2: One TrCH1: 1: 39 TrCH1: 1: 53  | >transportFormatSet                   | DedicatedTransChT       | DedicatedTransChT       |
| >>>tf0/ tf0,1  |                                       | FS                      | FS                      |
| TrCH2: (0x 99) TrCH3: (0x 40, 1x40) TrCH4: (0x144, 1x144)  >>>>rlcSize BitMode BitMode  >>>>sizeType TrCH1: type 1: 65 TrCH2: type 1: 99 TrCH2: type 1: 99 TrCH3: 2: type 2, part1= 2, part2= 0 (144)  >>>>logicalChannelList All  >>>t TrCH1: (1x39) TrCH2: (1x 53) TrCH2: (1x 53) TrCH3: N/A  >>>>numberOfTransportBl ocks TrCH1: One TrCH1: One TrCH1: 1: 39 TrCH1: 1: 53  | >>dynamicTF-information               |                         |                         |
| TrCH3: (0x 40, 1x40)   | >>>tf0/ tf0,1                         |                         |                         |
| 1x40)  |                                       |                         |                         |
| TrCH4: (0x144, 1x144)  |                                       |                         |                         |
| 1x144)   |                                       |                         | 1/174)                  |
| >>>>rlcSize         BitMode         BitMode           >>>>sizeType         TrCH1: type 1: 65<br>TrCH2: type 1: 99<br>TrCH3: type 1: 99<br>TrCH3: type 1: 40<br>TrCH3: 2: type 2,<br>part1= 2, part2= 0<br>(144)         TrCH3: 2: type 2,<br>part1= 2, part2= 0<br>(144)           >>>>numberOfTbSizeList         TrCH1-2: Zero<br>TrCH3-4: Zero, one         TrCH1-2: Zero<br>TrCH3-4: Zero, one           >>>>logicalChannelList         All         All           >>>tf 1         TrCH1: (1x39)<br>TrCH2: (1x 53)<br>TrCH3- TrCH4: N/A         TrCH1: (1x39)<br>TrCH3- TrCH4: N/A           >>>>numberOfTransportBl<br>ocks         TrCH1: One<br>TrCH2: One         TrCH1: One<br>TrCH2: One           >>>>rlc-Size         TrCH1-2: BitMode         TrCH1: 1: 39<br>TrCH1: 1: 39<br>TrCH1: 1: 53  |                                       |                         |                         |
| >>>>sizeType         TrCH1: type 1: 65<br>TrCH2: type 1: 99<br>TrCH3: type 1: 40<br>TrCH3: 2: type 2,<br>part1= 2, part2= 0<br>(144)         TrCH1: type 1: 61<br>TrCH2: type 1: 87<br>TrCH3: 2: type 2,<br>part1= 2, part2= 0<br>(144)           >>>numberOfTbSizeList         TrCH1-2: Zero<br>TrCH3-4: Zero, one         TrCH1-2: Zero<br>TrCH3-4: Zero, one           >>>logicalChannelList         All         All           >>>t1         TrCH1: (1x39)<br>TrCH2: (1x 53)<br>TrCH3- TrCH4: N/A         TrCH1: (1x39)<br>TrCH3- TrCH4: N/A           >>>numberOfTransportBl<br>ocks         TrCH1: One<br>TrCH2: One         TrCH1: One<br>TrCH2: One           >>>>rlc-Size         TrCH1-2: BitMode         TrCH1-2: BitMode           >>>>sizeType         TrCH1: 1: 39<br>TrCH2: 1: 53         TrCH1: 1: 53   | >>>rlcSize                            |                         | BitMode                 |
| TrCH2: type 1: 99 TrCH3: type 1: 40 TrCH3: type 2, part1= 2, part2= 0 (144)  >>>>numberOfTbSizeList TrCH3: Zero TrCH3: Zero TrCH3: Zero TrCH3: Zero, one TrCH1: (1x39) TrCH2: (1x 53) TrCH2: (1x 53) TrCH3- TrCH4: N/A TrCH3: N/A TrCH3: N/A TrCH1: One TrCH2: One TrCH2: One TrCH2: One TrCH1: 1: 39 TrCH1: 1: 39 TrCH1: 1: 53   |                                       |                         |                         |
| TrCH4: 2: type 2, part1= 2, part2= 0 (144)   | · · ·                                 | TrCH2: type 1: 99       | TrCH2: type 1: 87       |
| part1= 2, part2= 0 (144)   |                                       | TrCH3: type 1: 40       | TrCH3: 2: type 2,       |
| (144)     (144)  |                                       |                         |                         |
| >>>>numberOfTbSizeList         TrCH1-2: Zero TrCH3-4: Zero, one         TrCH1-2: Zero TrCH3: Zero, one           >>>>logicalChannelList         All         All           >>>tf 1         TrCH1: (1x39) TrCH1: (1x39) TrCH2: (1x53) TrCH2: (1x53) TrCH3- TrCH4: N/A         TrCH3- TrCH4: N/A           >>>>numberOfTransportBl ocks         TrCH1: One TrCH1: One TrCH2: One           >>>>rlc-Size         TrCH1-2: BitMode         TrCH1-2: BitMode           >>>>sizeType         TrCH1: 1: 39 TrCH1: 1: 39 TrCH1: 1: 53   |                                       |                         | (144)                   |
| TrCH3-4: Zero, one         TrCH3: Zero, one           >>>>logicalChannelList         All         All           >>>tf 1         TrCH1: (1x39)         TrCH1: (1x39)           TrCH2: (1x 53)         TrCH2: (1x53)           TrCH3- TrCH4: N/A         TrCH3: N/A           >>>>numberOfTransportBl ocks         TrCH1: One TrCH1: One TrCH2: One           >>>>rlc-Size         TrCH1-2: BitMode         TrCH1-2: BitMode           >>>>sizeType         TrCH1: 1: 39 TrCH1: 1: 39 TrCH1: 1: 53  | >>>numberOfThCirclict                 |                         | TrCU1 2: 7ara           |
| >>> logicalChannelList All TrCH1: (1x39) TrCH2: (1x53) TrCH2: (1x53) TrCH3- TrCH4: N/A TrCH3: N/A  >>> numberOfTransportBl TrCH4: One TrCH1: One TrCH2: One  >>>> rlc-Size TrCH4: 1: 39 TrCH1: 1: 39 TrCH1: 1: 53  |                                       |                         |                         |
| >>>tf 1  | >>>>IndicalChannell ist               | ·                       |                         |
| TrCH2: (1x 53)         TrCH2: (1x53)           TrCH3- TrCH4: N/A         TrCH3: N/A           >>>numberOfTransportBl ocks         TrCH1: One TrCH1: One TrCH2: One           >>>>rlc-Size         TrCH1: 2: BitMode         TrCH1: 2: BitMode           >>>>sizeType         TrCH1: 1: 39 TrCH1: 1: 39 TrCH1: 1: 53         TrCH1: 1: 53   |                                       |                         |                         |
| TrCH3- TrCH4: N/A         TrCH3: N/A           >>>numberOfTransportBl ocks         TrCH1: One TrCH1: One TrCH2: One           >>>rlc-Size         TrCH1-2: BitMode         TrCH1-2: BitMode           >>>>sizeType         TrCH1: 1: 39 TrCH1: 1: 39 TrCH1: 1: 53  |                                       |                         |                         |
| >>>>numberOfTransportBI ocks         TrCH1: One TrCH2: One TrCH2: One         TrCH2: One           >>>>rlc-Size         TrCH1-2: BitMode         TrCH1-2: BitMode           >>>>sizeType         TrCH1: 1: 39 TrCH1: 1: 39 TrCH1: 1: 53  |                                       |                         |                         |
| ocks         TrCH2: One         TrCH2: One           >>>>rlc-Size         TrCH1-2: BitMode         TrCH1-2: BitMode           >>>>sizeType         TrCH1: 1: 39<br>TrCH2: 1: 53         TrCH1: 1: 53   | >>>>numberOfTransportBl               |                         | TrCH1: One              |
| >>>>sizeType   | ocks                                  | TrCH2: One              | TrCH2: One              |
| TrCH2: 1: 53 TrCH1: 1: 53  | >>>rlc-Size                           |                         |                         |
|  | >>>>sizeType                          |                         |                         |
| >>>numberOf1bSizeList   TrCH1-2: One   TrCH1-2: One  |                                       |                         |                         |
|  | >>>>numberOfTbSizeList                | TrCH1-2: One            | TrCH1-2: One            |

| >>>logicalChannelList  | TrCH1: all                   | TrCH1: all                   |
|--|------------------------------|------------------------------|
| >>>tf 2  | TrCH1: (1x42)                | TrCH1: (1x42)                |
|  | TrCH2: (1x63)                | TrCH2: (1x63)                |
|  | TrCH3- TrCH4: N/A            | TrCH3: N/A                   |
| >>>numberOfTransportBl   | TrCH1: One                   | TrCH1: One                   |
| ocks   | TrCh2: One                   | TrCh2: One                   |
| >>>rlc-Size  | TrCH1: BitMode               | TrCH1: BitMode               |
| >>>>sizeType   | TrCH1: type 1: 42            | TrCH1: type 1: 42            |
| , ,  | TrCH2: type 1: 63            | TrCH2: type 1: 63            |
| >>>>numberOfTbSizeList   | TrCH1: One                   | TrCH1: One                   |
|  | TrCH2: One                   | TrCH2: One                   |
| >>>logicalChannelList  | TrCH1: all                   | TrCH1: all                   |
|  | TrCH2: all                   | TrCH2: all                   |
| >>>tf 3  | TrCH1: (1x55)                | TrCH1: (1x55)                |
|  | TrCH2: (1x76)                | TrCH2: (1x76)                |
| A CONTRACTOR OF STATE | TrCH3- TrCH4: N/A            | TrCH3: N/A                   |
| >>>>numberOfTransportBl  | TrCH1: One                   | TrCh2: One                   |
| ocks<br>>>>rlc-Size  | TrCh2: One<br>TrCH1: BitMode | TrCh2: One<br>TrCH1: BitMode |
| >>>sizeType  | TrCH1: type 1: 55            | TrCH1: type 1: 55            |
| >>>>512e i ype   | TrCH1: type 1: 55            | TrCH1: type 1: 35            |
| >>>>numberOfTbSizeList   | TrCH2. type 1. 76            | TrCH2. type 1. 76            |
|  | TrCH1: One                   | TrCH1: One                   |
| >>>>logicalChannelList   | TrCH1: all                   | TrCH1: all                   |
| iogicalOrialiTelList   | TrCH2: all                   | TrCH2: all                   |
| >>>tf 4  | TrCH1: (1x58)                | TrCH1: (1x58)                |
|  | TrCH2: (1x99)                | TrCH2: (1x87)                |
|  | TrCH3- TrCH4: N/A            | TrCH3: N/A                   |
| >>>>numberOfTransportBl  | TrCH1: One                   | TrCH1: One                   |
| ocks   | TrCh2: One                   | TrCh2: One                   |
| >>>rlc-Size  | TrCH1: BitMode               | TrCH1: BitMode               |
| >>>>sizeType   | TrCH1: type 1: 58            | TrCH1: type 1: 58            |
|  | TrCH2: type 1: 99            | TrCH2: type 1: 87            |
| >>>>numberOfTbSizeList   | TrCH1: One                   | TrCH1: One                   |
|  | TrCH2: One                   | TrCH2: One                   |
| >>>>logicalChannelList   | TrCH1: all                   | TrCH1: all                   |
|  | TrCH2: all                   | TrCH2: all                   |
| >>>tf 5  | TrCH1: (1x65)                | TrCH1: (1x61)                |
|  | TrCH2- TrCH4: N/A            | TrCH2- TrCH4: N/A            |
| >>>>numberOfTransportBl  | TrCH1: One                   | TrCH1: One                   |
| ocks   | TrCH1: BitMode               | TrCH1: BitMode               |
| >>>rlc-Size  | TrCH1: type 1: 65            |                              |
| >>>>sizeType >>>>numberOfTbSizeList  |                              | TrCH1: type 1: 61            |
|  | TrCH1: One<br>TrCH1: all     | TrCH1: One<br>TrCH1: all     |
| >>>logicalChannelList >>semistaticTF-Information   | TIOTTI. All                  | TIOTTE All                   |
| >>>tti   | TrCH1- TrCH3: 20             | TrCH1- TrCH2: 20             |
|  | TrCH4: 40                    | TrCH3: 40                    |
| >>>channelCodingType   | Convolutional                | Convolutional                |
| >>>codingRate  | TrCH1- TrCH2:                | TrCH1- TrCH2:                |
| l s s s s s s s s s s s s s s s s s s s  | Third                        | Third                        |
|  | TrCH3: Half                  | TrCH3: Third                 |
|  | TrCH4: Third                 | <u> </u>                     |
| >>>rateMatchingAttribute   | TrCH1: 200                   | TrCH1: 200                   |
|  | TrCH2: 190                   | TrCH2: 190                   |
|  | TrCH3: 235                   | TrCH3: 160                   |
|  | TrCH4: 160                   |                              |
| >>>crc-Size  | TrCH1: 12                    | TrCH1: 12                    |
|  | TrCH2- TrCH3: 0              | TrCH2: 0                     |
| DI   | TrCH4: 16                    | TrCH3: 16                    |
| DL-  |                              |                              |
| AddReconfTransChInfoList   | dob                          | dob                          |
| >Downlink transport  | dch                          | dch                          |
| channel type   | <u>I</u>                     |                              |

| >dl-   | TrCH1: 1, TrCH2: 2,   | TrCH1: 1, TrCH2: 2,   |
|--|---|---|
| TransportChannelIdentity   | TrCH3: 3, TrCH4: 4,<br>TrCH5: 5   | TrCH3: 3, TrCH4: 4  |
| >tfs-SignallingMode  | Independent   | Independent   |
| - tio Oigiramiigiriodo   | <only on="" td="" tf0="" trch1<=""><td><only on="" td="" tf0="" trch1<=""></only></td></only>   | <only on="" td="" tf0="" trch1<=""></only>  |
|  | and tf0/tf1 on  | and tf0/tf1 on  |
|  | TrCH5 are different   | TrCH4 are different   |
|  | and shown below>  | and shown below>  |
| >>transportFormatSet   | and shown belows  | and snown below?  |
| >>>dynamicTF-information   |   |   |
|  | T::OLI4: (4::O)   | T::OLI4: (4::0)   |
| >>>>tf0/ tf0,1   | TrCH1: (1x0)  | TrCH1: (1x0)  |
| 1.0:   | TrCH5: (0x3, 1x3)   | TrCH4: (0x3, 1x3)   |
| >>>rlcSize   | BitMode   | bitMode   |
| >>>>sizeType   | TrCH1: type 1: 0  | TrCH1: type 1: 0  |
|  | TrCH5: type 1: 3  | TrCH4: type 1: 3  |
| >>>>numberOfTbSizeList   | TrCH1: One  | TrCH1: One  |
|  | TrCH5: Zero, one  | TrCH4: Zero, one  |
| >>>>logicalChannelList   | All   | All   |
| >>>semistaticTF-   | same as UL except   | same as UL except   |
| Information  | for TrCH5   | for TrCH4   |
| >>>>tti  | TrCH5: 20   | TrCH4: 20   |
| >>>channelCodingType   | Convolutional   | Convolutional   |
| >>>>codingRate   | TrCH5: Third  | TrCH4: Third  |
| >>>rateMatchingAttribute   | TrCH5: 200  | TrCH4: 200  |
| >>>crc-Size  | TrCH5: 12   | TrCH4: 12   |
|  |   |   |
| >>ULTrCH-Id  | TrCH1: 1, TrCH2: 2,   | TrCH1: 1, TrCH2: 2,   |
|  | TrCH3: 3, TrCH4: 4,   | TrCH3: 3  |
| >dch-QualityTarget   | _   | _   |
| >>bler-QualityValue  | TrCH1: 7x10 <sup>-3</sup>   | TrCH1: 7x10 <sup>-3</sup>   |
|  | TrCH2- TrCH5:   | TrCH2- TrCH4:   |
|  | Absent  | Absent  |
| TrCH INFORMATION,  |   |   |
| COMMON   |   |   |
|  |   |   |
| ul-CommonTransChInfo   |   |   |
| ul-CommonTransChInfo   | 1   | 1   |
| >tfcs-ID (TDD only)  | 1<br>FALSE  | 1<br>FALSE  |
| >tfcs-ID (TDD only) >sharedChannelIndicator  | 1<br>FALSE  | 1<br>FALSE  |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only)   | FALSE   | FALSE   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset  | FALSE Absent, not required  | FALSE Absent, not required  |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only)   | FALSE  Absent, not required  Normal TFCI  | FALSE  Absent, not required  Normal TFCI  |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS   | FALSE  Absent, not required  Normal TFCI signalling   | FALSE  Absent, not required  Normal TFCI signalling   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS >>explicitTFCS-   | FALSE  Absent, not required  Normal TFCI  | FALSE  Absent, not required  Normal TFCI  |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode  | FALSE  Absent, not required  Normal TFCI signalling  Complete   | FALSE  Absent, not required  Normal TFCI signalling  Complete   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize  | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc6Bit   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>TFCS representation   | FALSE  Absent, not required  Normal TFCI signalling  Complete   | FALSE  Absent, not required  Normal TFCI signalling  Complete   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>TFCS representation >>>>TFC list  | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc6Bit  Addition   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>TFCS representation   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0,  | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc6Bit   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>TFCS representation >>>>TFC list >>>>TFC 1  | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc6Bit  Addition   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>TFCS representation >>>>TFC list >>>>>>TFC 1 >>>>>>ctfc   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0,  | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc6Bit  Addition   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>TFCS representation >>>>TFC list >>>>>>TFC 1 >>>>>>ctfc   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0, TF0, TF0)  | Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0)  |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>TFCS representation >>>>TFC list >>>>TFC 1  | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0, TF0, TF0)  0   | FALSE  Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0)   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>>TFCS representation >>>>TFC list >>>>>>TFC 1  >>>>>>ctfc   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0, TF0, TF0)  0   | FALSE  Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0)   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>ctfcSize >>>TFCS representation >>>>TFC list >>>>>TFC 1  >>>>>>ctfc >>>>>>ctfc   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0, TF0)  0  Computed  | FALSE  Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0)  0 Computed  0  |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>ctfcSize >>>TFCS representation >>>>TFC list >>>>>TFC 1  >>>>>>ctfc >>>>>referenceTFCId  | FALSE  Absent, not required Normal TFCI signalling Complete  Ctfc8Bit Addition  (TF0, TF0, TF0, TF0) 0 Computed 0 (TF1, TF0, TF0,   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc6Bit  Addition  (TF0, TF0, TF0)  0  Computed   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>ctfcSize >>>TFCS representation >>>>TFC list >>>>>TFC 1  >>>>>>TFC 1  >>>>>>>>TFC 1  | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0, TF0)  0  Computed  | FALSE  Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0)  0 Computed  0  |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>ctfcSize >>>TFCS representation >>>>TFC 1  >>>>>>tfc >>>>>>TFC 1   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0, TF0)  0  Computed  0  (TF1, TF0, TF0, TF0, TF0)  1   | Absent, not required Normal TFCI signalling Complete Ctfc6Bit Addition (TF0, TF0, TF0) 0 Computed 0 (TF1, TF0, TF0)   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>ctfcSize >>>TFCS representation >>>>TFC list >>>>>TFC 1  >>>>>TFC 1  >>>>>TFC 2  >>>>>TFC 2  | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit Addition  (TF0, TF0, TF0, TF0) 0 Computed  0 (TF1, TF0, TF0, TF0, TF0)  | Absent, not required Normal TFCI signalling Complete Ctfc6Bit Addition (TF0, TF0, TF0) 0 Computed 0 (TF1, TF0, TF0)   |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>TFCS representation >>>>TFC list >>>>>TFC 1  >>>>>>tfc-Subset >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>  | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0, TF0)  TF0)  0  Computed  0  (TF1, TF0, TF0, TF0, TF0)  1  Computed                               | FALSE  Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0)  0 Computed  0 (TF1, TF0, TF0)  1 Computed                        |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>>TFCS representation >>>>TFC list >>>>>>ctfc >>>>>TFC 1  >>>>>>>tfc-Subset >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0, TF0, TF0)  0  Computed  0  (TF1, TF0, TF0, TF0, TF0)  1  Computed                                | Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0) 0 Computed 0 (TF1, TF0, TF0) 1 Computed N/A                              |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>>TFCS representation >>>>TFC list >>>>>>ctfc >>>>>referenceTFCId >>>>>TFC 2  >>>>>>ctfc >>>>>>BainFactorInform ation >>>>>>Bc (FDD only) >>>>>>Bd   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0, TF0)  TF0)  0  Computed  0  (TF1, TF0, TF0, TF0, TF0)  1  Computed                               | FALSE  Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0)  0 Computed  0 (TF1, TF0, TF0)  1 Computed                        |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>>TFCS representation >>>>TFC list >>>>>>ctfc >>>>>TFC 1  >>>>>>>tfc-Subset >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0, TF0, TF0)  0  Computed  0  (TF1, TF0, TF0, TF0, TF0)  1  Computed                                | Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0) 0 Computed 0 (TF1, TF0, TF0) 1 Computed N/A                              |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>>TFCS representation >>>>TFC list >>>>>>ctfc >>>>>referenceTFCId >>>>>TFC 2  >>>>>>ctfc >>>>>>BainFactorInform ation >>>>>>Bc (FDD only) >>>>>>Bd   | FALSE  Absent, not required  Normal TFCI signalling Complete  Ctfc8Bit Addition  (TF0, TF0, TF0, TF0, TF0) 0 Computed  0 (TF1, TF0, TF0, TF0, TF0) 1 Computed  N/A N/A 0                            | Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0)  0 Computed  0 (TF1, TF0, TF0)  1 Computed  N/A  N/A  0                  |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>>TFCS representation >>>>TFC list >>>>>>ctfc >>>>>referenceTFCId >>>>>>TFC 2  >>>>>>βc (FDD only) >>>>>>βd >>>>>>referenceTFCId   | FALSE  Absent, not required  Normal TFCI signalling  Complete  Ctfc8Bit  Addition  (TF0, TF0, TF0, TF0, TF0)  0  Computed  0  (TF1, TF0, TF0, TF0, TF0)  1  Computed  N/A  N/A                      | Absent, not required Normal TFCI signalling Complete Ctfc6Bit Addition (TF0, TF0, TF0) 0 Computed 0 (TF1, TF0, TF0) 1 Computed N/A N/A                            |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>ctfcSize >>>TFCS representation >>>>TFC list >>>>>ctfc >>>>>referenceTFCId >>>>>>painFactorInform ation >>>>>>FC (FDD only) >>>>>>βd >>>>>TFC 3  | FALSE  Absent, not required Normal TFCI signalling Complete  Ctfc8Bit Addition  (TF0, TF0, TF0, TF0, TF0) 0 Computed 0 (TF1, TF0, TF0, TF0, TF0) 1 Computed N/A N/A 0 (TF2, TF1, TF0,               | Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0)  0 Computed  0 (TF1, TF0, TF0)  1 Computed  N/A  N/A  0                  |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>>TFCS representation >>>>TFC list >>>>>>ctfc >>>>>ctfc >>>>>>ctfc >>>>>>painFactorInform ation >>>>>TFC 2  >>>>>>bctfc >>>>>>>>>>pctfc >>>>>>TFC 2  >>>>>>TFC 3  >>>>>>TFC 3  >>>>>>ctfc                    | FALSE  Absent, not required Normal TFCI signalling Complete  Ctfc8Bit Addition  (TF0, TF0, TF0, TF0, TF0) 0 Computed  0 (TF1, TF0, TF0, TF0, TF0) 1 Computed  N/A N/A 0 (TF2, TF1, TF0, TF0, TF0) 8 | Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0)  0 Computed  0 (TF1, TF0, TF0)  1 Computed  N/A N/A 0 (TF2, TF1, TF0)  8 |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>ctfcSize >>>TFCS representation >>>>TFC list >>>>>>TFC 1  >>>>>>TFC 1  >>>>>>>TFC 2  >>>>>>TFC 2  >>>>>>BgainFactorInform ation >>>>>>Bc (FDD only) >>>>>Bd >>>>>TFC 3  >>>>>>TFC 3  >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> | FALSE  Absent, not required Normal TFCI signalling Complete  Ctfc8Bit Addition  (TF0, TF0, TF0, TF0, TF0) 0 Computed  0 (TF1, TF0, TF0, TF0, TF0) 1 Computed  N/A N/A 0 (TF2, TF1, TF0, TF0, TF0)   | Absent, not required Normal TFCI signalling Complete Ctfc6Bit Addition (TF0, TF0, TF0) 0 Computed 0 (TF1, TF0, TF0) 1 Computed N/A N/A 0 (TF2, TF1, TF0)          |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) > tfc-Subset >ul-TFCS  >>explicitTFCS- ConfigurationMode >>>ctfcSize >>>>TFCS representation >>>>TFC list >>>>>>ctfc >>>>>ctfc >>>>>>ctfc >>>>>>painFactorInform ation >>>>>TFC 2  >>>>>>bctfc >>>>>>>>>>pctfc >>>>>>TFC 2  >>>>>>TFC 3  >>>>>>TFC 3  >>>>>>ctfc                    | FALSE  Absent, not required Normal TFCI signalling Complete  Ctfc8Bit Addition  (TF0, TF0, TF0, TF0, TF0) 0 Computed  0 (TF1, TF0, TF0, TF0, TF0) 1 Computed  N/A N/A 0 (TF2, TF1, TF0, TF0, TF0) 8 | Absent, not required Normal TFCI signalling Complete  Ctfc6Bit Addition  (TF0, TF0, TF0)  0 Computed  0 (TF1, TF0, TF0)  1 Computed  N/A N/A 0 (TF2, TF1, TF0)  8 |

|   | T  |  |
|---|--|--|
| >>>>TFC 4   | (TF3, TF2, TF0,  | (TF3, TF2, TF0)  |
|   | TF0)   |  |
| >>>>>ctfc   | 15   | 15   |
| >>>>>gainFactorInform   | Computed   | Computed   |
| ation   |  |  |
| >>>>>βc (FDD only)  |  |  |
|   |  |  |
| >>>>>βd   | 0  |  |
| >>>>>>referenceTFCld  | 0  | 0  |
| >>>>TFC 5   | (TF4, TF3, TF0, TF0)   | (TF4, TF3, TF0)  |
| >>>>>ctfc   | 22   | 22   |
| >>>>>gainFactorInform   | Computed   | Computed   |
| ation   |  |  |
| >>>>>referenceTFCId   | 0  | 0  |
| >>>>TFC 6   | (TF5, TF4, TF1,  | (TF5, TF4, TF0)  |
|   | TF0)   | (11 3, 11 4, 11 0)   |
|   |  | 20   |
| >>>>>ctfc   | 59   | 29   |
| >>>>>gainFactorInform   | Computed   | Computed   |
| ation   |  |  |
| >>>>>βc (FDD only)  | <u> </u>   | <u> </u>   |
| >>>>>βd   |  |  |
| >>>>>referenceTFCId   | 0  | 0  |
| >>>>>TFC 7  | _ ·  | (TF0, TF0, TF1)  |
| >>>>> IFU /   | (TF0, TF0, TF0,  | (10, 10, 11)   |
|   | TF1)   | 20   |
| >>>>>ctfc   | 60   | 30   |
| >>>>>gainFactorInform   | Computed   | Computed   |
| ation   |  |  |
| >>>>>>referenceTFCld  | 0  | 0  |
| >>>>TFC 8   | (TF1, TF0, TF0,  | (TF1, TF0, TF1)  |
|   | TF1)   | ,  |
| >>>>>ctfc   | 61   | 31   |
| >>>>>gainFactorInform   | computed   | computed   |
| ation   | Jonipatou  | Jonipatou  |
| >>>>>βc (FDD only)  |  |  |
| >>>>>βd   |  |  |
| >>>>>referenceTFCId   | 0  | 0  |
| >>>>TFC 9   | _  | -  |
| >>>>> 1FG 9   | (TF2, TF1, TF0,<br>TF1)  | (TF2, TF1, TF1)  |
| >>>>>ctfc   | 68   | 38   |
| >>>>>gainFactorInform   | computed   | computed   |
| ation   | <u> </u>   | <u> </u>   |
| >>>>>>referenceTFCld  | 0  | 0  |
|   |  |  |
| >>>>TFC 10  | (TF3, TF2, TF0.  | (TF3, TF2, TF1)  |
|   | (TF3, TF2, TF0, TF1)   | (TF3, TF2, TF1)  |
| >>>>TFC 10  | TF1)   |  |
| >>>>TFC 10  | TF1)<br>75   | 45   |
| >>>>>TFC 10  >>>>>ctfc >>>>>gainFactorInform  | TF1)   |  |
| >>>>>TFC 10  >>>>>ctfc >>>>>gainFactorInform ation  | TF1)<br>75   | 45   |
| >>>>>TFC 10  >>>>>ctfc >>>>>gainFactorInform  | TF1)<br>75   | 45   |
| >>>>>TFC 10  >>>>>ctfc >>>>>gainFactorInform ation  | TF1)<br>75   | 45   |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>>βc (FDD only) >>>>>>βd   | TF1)<br>75   | 45   |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>>βc (FDD only)  | TF1) 75 computed 0   | 45<br>computed   |
| >>>>TFC 10  >>>>>ctfc >>>>>gainFactorInform ation >>>>>βc (FDD only) >>>>>βd >>>>>referenceTFCId  | TF1) 75 computed   | 45 computed 0  |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>>βc (FDD only) >>>>>>βd >>>>>>referenceTFCld  | TF1) 75 computed  0 (TF4, TF3, TF0,  | 45 computed 0  |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>>βc (FDD only) >>>>>>βd >>>>>TFC 11  >>>>>>TFC 11   | TF1) 75 computed  0 (TF4, TF3, TF0, TF1) 82  | 45<br>computed  0 (TF4, TF3, TF1)  52  |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>>βc (FDD only) >>>>>>βd >>>>>TFC 11  >>>>>ctfc >>>>>>TFC 11   | TF1) 75 computed  0 (TF4, TF3, TF0, TF1)   | 45 computed  0 (TF4, TF3, TF1)   |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>>βc (FDD only) >>>>>>βd >>>>>TFC 11  >>>>>ctfc >>>>>>tfc >>>>>>TFC 11   | TF1) 75 computed  0 (TF4, TF3, TF0, TF1) 82 computed                                       | 45 computed  0 (TF4, TF3, TF1)  52 computed                                  |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>>βc (FDD only) >>>>>>βd >>>>>TFC 11  >>>>>ctfc >>>>>>tfc >>>>>referenceTFCId >>>>>spainFactorInform ation   | TF1) 75 computed  0 (TF4, TF3, TF0, TF1) 82 computed  0                                    | 45 computed  0 (TF4, TF3, TF1)  52 computed  0                               |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>>βc (FDD only) >>>>>>βd >>>>>TFC 11  >>>>>ctfc >>>>>>tfc >>>>>>TFC 11   | TF1) 75 computed  0 (TF4, TF3, TF0, TF1) 82 computed  0 (TF5, TF4, TF1,                    | 45 computed  0 (TF4, TF3, TF1)  52 computed                                  |
| >>>>>TFC 10 $>>>>>>ctfc$ $>>>>>gainFactorInform$ ation $>>>>>βc (FDD only)$ $>>>>>>βd$ $>>>>>TFC 11$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>>gainFactorInform$ ation $>>>>>referenceTFCld$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>>referenceTFCld$ $>>>>>ctfc$ $>>>>ctfc$ $>>>>>ctfc$ $>>>>ctfc$ $>>>>ctfc$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>ctfc$ $>>>>ctfc$ $>>>>ctfc$ $>>>>>ctfc$ $>>>>ctfc$ $>>>>ctfc$ $>>>>ctfc$ $>>>>ctfc$ $>>>>ctfc$ $>>>>ctfc$ $>>>>ctfc$ $>>>>ctfc$ $>>ctfc$ $>>ctfc$ $>>>>ctfc$ $>>>>ctfc$ $>>ctfc$ $>>>>ctfc$ $>>>ctfc$ $>>ctfc$ $>>>>ctfc$ $>>ctfc$ $>>ctfc$ $>>>>ctfc$ $>>ctfc$ $>>ctfc$ $>>ctfc$ $>>ctfc$ $>>ctfc$ $>>ctfc$ $>>ctfc$ $>>ctfc$ $>>>ctfc$ $>>ctfc$ $>ctfc$ $>>ctfc$ $>>ctfc$ $>ctfc$ $>>ctfc$ $>ctfc$ | TF1) 75 computed  0 (TF4, TF3, TF0, TF1) 82 computed  0 (TF5, TF4, TF1, TF1)               | 45 computed  0 (TF4, TF3, TF1)  52 computed  0 (TF5, TF4, TF1)               |
| >>>>TFC 10 $>>>>>ctfc$ $>>>>>gainFactorInform$ ation $>>>>>βc (FDD only)$ $>>>>>βd$ $>>>>>TFC 11$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>>gainFactorInform$ ation $>>>>>referenceTFCId$ $>>>>>ctfc$ $>>>>>referenceTFCId$ $>>>>>ctfc$ $>>>>>referenceTFCId$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>>ctfc$ $>>>>>ctfc$   | TF1) 75 computed  0 (TF4, TF3, TF0, TF1) 82 computed  0 (TF5, TF4, TF1, TF1) 119           | 45<br>computed  0 (TF4, TF3, TF1)  52 computed  0 (TF5, TF4, TF1)  59        |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>>βc (FDD only) >>>>>>βd >>>>>TFC 11  >>>>>ctfc >>>>>>tfc >>>>>TFC 11  >>>>>>tfc >>>>>tfc >>>>>tfc >>>>>>tfc >>>>>ctfc >>>>>>TFC 12  >>>>>>ctfc >>>>>>tfc >>>>>>>ctfc >>>>>>>>>>   | TF1) 75 computed  0 (TF4, TF3, TF0, TF1) 82 computed  0 (TF5, TF4, TF1, TF1)               | 45 computed  0 (TF4, TF3, TF1)  52 computed  0 (TF5, TF4, TF1)               |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>>βc (FDD only) >>>>>>βd >>>>>referenceTFCId >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId >>>>>TFC 11  >>>>>TFC 12  >>>>>ctfc >>>>>>ctfc  | TF1) 75 computed  0 (TF4, TF3, TF0, TF1) 82 computed  0 (TF5, TF4, TF1, TF1) 119 signalled | 45 computed  0 (TF4, TF3, TF1)  52 computed  0 (TF5, TF4, TF1)  59 signalled |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>βc (FDD only) >>>>>>βd >>>>>referenceTFCId >>>>>ctfc >>>>>ctfc >>>>>sgainFactorInform ation >>>>>TFC 11  >>>>>ctfc >>>>>TFC 12  >>>>>ctfc >>>>>>ctfc >>>>>>ctfc   | TF1) 75 computed  0 (TF4, TF3, TF0, TF1) 82 computed  0 (TF5, TF4, TF1, TF1) 119           | 45<br>computed  0 (TF4, TF3, TF1)  52 computed  0 (TF5, TF4, TF1)  59        |
| >>>>>TFC 10  >>>>>>ctfc >>>>>>gainFactorInform ation >>>>>>βc (FDD only) >>>>>>βd >>>>>referenceTFCId >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId >>>>>TFC 11  >>>>>TFC 12  >>>>>ctfc >>>>>>ctfc  | TF1) 75 computed  0 (TF4, TF3, TF0, TF1) 82 computed  0 (TF5, TF4, TF1, TF1) 119 signalled | 45 computed  0 (TF4, TF3, TF1)  52 computed  0 (TF5, TF4, TF1)  59 signalled |

| >>>>>referenceTFCld      | 0                      | 0                    |
|--------------------------|------------------------|----------------------|
| > TFC subset list        | 0                      | U                    |
|                          | (an a a a b mate 40.0) | (anasah rata 7.4)    |
| >>TFC subset 1           | (speech rate 10.2)     | (speech rate 7.4)    |
| >>> Allowed transport    | (TFC1, TFC2,           | (TFC1, TFC2,         |
| format combination list  | TFC3, TFC4, TFC5,      | TFC3, TFC4, TFC5,    |
|                          | TFC7, TFC8, TFC6,      | TFC7, TFC8, TFC6,    |
|                          | TFC9, TFC10,           | TFC9, TFC10,         |
|                          | TFC11, TFC12)          | TFC11, TFC12)        |
| >>TFC subset 2           | (speech rate 6.7)      | (speech rate 6.7)    |
| >>> Allowed transport    | (TFC1, TFC2,           | (TFC1, TFC2,         |
| format combination list  | TFC3, TFC4, TFC7,      | TFC3, TFC4, TFC7,    |
|                          | TFC8, TFC5, TFC9,      | TFC8, TFC5, TFC9,    |
|                          | TFC10, TFC11)          | TFC10, TFC11)        |
| >>TFC subset 3           | (speech rate 5.9)      | (speech rate 5.9)    |
| >>> Allowed transport    | (TFC1, TFC2,           | (TFC1, TFC2,         |
| format combination list  | TFC3, TFC7, TFC8,      | TFC3, TFC7, TFC8,    |
|                          | TFC4, TFC9,            | TFC4, TFC9,          |
|                          | TFC10)                 | TFC10)               |
| >>TFC subset 4           | (speech rate 4.75)     | (speech rate 4.75)   |
| >>> Allowed transport    | (TFC1, TFC2,           | (TFC1, TFC2,         |
| format combination list  | TFC7, TFC8, TFC3,      | TFC7, TFC8, TFC3,    |
| Torrial Combination list | TFC9)                  | TFC7, 1FC6, 1FC3,    |
| dl-CommonTransChlafa     | 11 00)                 | 11 00)               |
| dl-CommonTransChInfo     | Indonondont            | Indonondont          |
| >tfcs-SignallingMode     | Independent            | Independent          |
| >tfcs-ID (TDD only)      | 1                      | 1                    |
| >sharedChannelIndicator  | FALSE                  | FALSE                |
| (TDD only)               |                        |                      |
| > tfc-Subset             | Absent, not required   | Absent, not required |
| >dl-TFCS                 | Normal TFCI            | Normal TFCI          |
|                          | signalling             | signalling           |
| >>explicitTFCS-          | Complete               | Complete             |
| ConfigurationMode        |                        |                      |
| >>>ctfcSize              | Ctfc8Bit               | Ctfc8Bit             |
| >>>>TFCS representation  | Addition               | Addition             |
| >>>>TFCS list            |                        |                      |
| >>>>TFC 1                | (TF0, TF0, TF0,        | (TF0, TF0, TF0,      |
| 777771101                | TF0, TF0)              | TF0)                 |
| >>>>>ctfc                | 0                      | 0                    |
| >>>>TFC 2                | (TF1, TF0, TF0,        | (TF1, TF0, TF0,      |
| >>>>> IFG 2              | TF0, TF0)              | TF0)                 |
|                          |                        | ,                    |
| >>>>>ctfc                | 1 (750, 754, 750       | 1                    |
| >>>>TFC 3                | (TF2, TF1, TF0,        | (TF2, TF1, TF0,      |
|                          | TF0, TF0)              | TF0)                 |
| >>>>>ctfc                | 8                      | 8                    |
| >>>>TFC 4                | (TF3, TF2, TF0,        | (TF3, TF2, TF0,      |
|                          | TF0, TF0)              | TF0)                 |
| >>>>>ctfc                | 15                     | 15                   |
| >>>>TFC 5                | (TF4, TF3, TF0,        | (TF4, TF3, TF0,      |
|                          | TF0, TF0)              | TF0)                 |
| >>>>>ctfc                | 22                     | 22                   |
| >>>>TFC 6                | (TF5, TF4, TF1,        | (TF5, TF4, TF0,      |
|                          | TF0, TF0)              | TF0)                 |
| >>>>>ctfc                | 59                     | 29                   |
| >>>>TFC 7                | (TF0, TF0, TF0,        | (TF0, TF0, TF1,      |
|                          | TF1, TF0)              | TF0)                 |
| >>>>>ctfc                | 60                     | 30                   |
|                          |                        |                      |
| >>>>TFC 8                | (TF1, TF0, TF0,        | (TF1, TF0, TF1,      |
|                          | TF1, TF0)              | TF0)                 |
| >>>>>ctfc                | 61                     | 31                   |
| >>>>TFC 9                | (TF2, TF1, TF0,        | (TF2, TF1, TF1,      |
|                          | TF1, TF0)              | TF0)                 |
| >>>>>ctfc                | 68                     | 38                   |
| >>>>TFC 10               | (TF3, TF2, TF0,        | (TF3, TF2, TF1,      |
|                          | TF1, TF0)              | TF0)                 |
| >>>>>ctfc                | 75                     | 45                   |
| //////OUIO               |                        |                      |

|  | 1                                    |                                       |
|--|--------------------------------------|---------------------------------------|
| >>>>TFC 11   | (TF4, TF3, TF0,                      | (TF4, TF3, TF1,                       |
|  | TF1, TF0)                            | TF0)                                  |
| >>>>>ctfc  | 82                                   | 52                                    |
|  |                                      |                                       |
| >>>>TFC 12   | (TF5, TF4, TF1,                      | (TF5, TF4, TF1,                       |
|  | TF1, TF0)                            | TF0)                                  |
| >>>>>ctfc  | 119                                  | 59                                    |
|  |                                      |                                       |
| >>>>TFC 13   | (TF0, TF0, TF0,                      | (TF0, TF0, TF0,                       |
|  | TF0, TF1)                            | TF1)                                  |
| >>>>>ctfc  | 120                                  | 60                                    |
| >>>>TFC 14   |                                      |                                       |
| >>>>>1FC 14  | (TF1, TF0, TF0,                      | (TF1, TF0, TF0,                       |
|  | TF0, TF1)                            | TF1)                                  |
| >>>>>ctfc  | 121                                  | 61                                    |
| >>>>TFC 15   | (TF2, TF1, TF0,                      | (TF2, TF1, TF0,                       |
| ///////////////////////////////////////  |                                      |                                       |
|  | TF0, TF1)                            | TF1)                                  |
| >>>>>ctfc  | 128                                  | 68                                    |
| >>>>TFC 16   | (TF3, TF2, TF0,                      | (TF3, TF2, TF0,                       |
| 7777711 0 10   |                                      |                                       |
|  | TF0, TF1)                            | TF1)                                  |
| >>>>>ctfc  | 135                                  | 75                                    |
| >>>>TFC 17   | (TF4, TF3, TF0,                      | (TF4, TF3, TF0,                       |
|  | TF0, TF1)                            | TF1)                                  |
|  |                                      | · · · · · · · · · · · · · · · · · · · |
| >>>>>ctfc  | 142                                  | 82                                    |
| >>>>TFC 18   | (TF5, TF4, TF1,                      | (TF5, TF4, TF0,                       |
|  | TF0, TF1)                            | TF1)                                  |
|  |                                      |                                       |
| >>>>>ctfc  | 179                                  | 89                                    |
| >>>>TFC 19   | (TF0, TF0, TF0,                      | (TF0, TF0, TF1,                       |
|  | TF1, TF1)                            | TF1)                                  |
| atfa   |                                      | + <i>'</i>                            |
| >>>>>ctfc  | 180                                  | 90                                    |
| >>>>TFC 20   | (TF1, TF0, TF0,                      | (TF1, TF0, TF1,                       |
|  | TF1, TF1)                            | TF1)                                  |
| >>>>>ctfc  | 181                                  | 91                                    |
|  |                                      |                                       |
| >>>>>TFC 21  | (TF2, TF1, TF0,                      | (TF2, TF1, TF1,                       |
|  | TF1, TF1)                            | TF1)                                  |
| >>>>>ctfc  | 188                                  | 98                                    |
| >>>>TFC 22   | (TF3, TF2, TF0,                      | (TF3, TF2, TF1,                       |
| ///////////////////////////////////////  |                                      | 1 T                                   |
|  | TF1, TF1)                            | TF1)                                  |
| >>>>>ctfc  | 195                                  | 105                                   |
| >>>>TFC 23   | (TF4, TF3, TF0,                      | (TF4, TF3, TF1,                       |
| 7777711020   | TF1, TF1)                            |                                       |
|  |                                      | TF1)                                  |
| >>>>>ctfc  | 202                                  | 112                                   |
| >>>>TFC 24   | (TF5, TF4, TF1,                      | (TF5, TF4, TF1,                       |
|  | TF1, TF1)                            | TF1)                                  |
| .,   |                                      | 1                                     |
| >>>>>ctfc  | 239                                  | 119                                   |
| PhyCH INFORMATION  |                                      | 1                                     |
| FDD  |                                      | 1                                     |
|  |                                      | 1                                     |
| UL-DPCH-InfoPredef   |                                      | 1                                     |
| >ul-DPCH-  | 1                                    | i e                                   |
| =  |                                      |                                       |
| PowerControlInfo   |                                      |                                       |
| PowerControlInfo   | Algorithm 1                          | Algorithm 1                           |
| PowerControlInfo >>powerControlAlgorithm   | Algorithm 1                          | Algorithm 1                           |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize  | 1 dB                                 | 1 dB                                  |
| PowerControlInfo >>powerControlAlgorithm   |                                      |                                       |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence  | 1 dB<br>TRUE                         | 1 dB<br>TRUE                          |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit   | 1 dB                                 | 1 dB                                  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL-   | 1 dB<br>TRUE                         | 1 dB<br>TRUE                          |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit   | 1 dB<br>TRUE                         | 1 dB<br>TRUE                          |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef   | 1 dB<br>TRUE                         | 1 dB<br>TRUE                          |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dI-DPCH-InfoCommon   | 1 dB<br>TRUE<br>0.88                 | 1 dB<br>TRUE<br>0.88                  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dI-DPCH-InfoCommon >>spreadingFactor   | 1 dB<br>TRUE<br>0.88                 | 1 dB<br>TRUE<br>0.88                  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dI-DPCH-InfoCommon   | 1 dB<br>TRUE<br>0.88                 | 1 dB<br>TRUE<br>0.88                  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dI-DPCH-InfoCommon >>spreadingFactor >>tfci-Existence  | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE | 1 dB<br>TRUE<br>0.88                  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dI-DPCH-InfoCommon >>spreadingFactor >>tfci-Existence >>pilotBits  | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dI-DPCH-InfoCommon >>spreadingFactor >>tfci-Existence  | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE | 1 dB<br>TRUE<br>0.88                  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dl-DPCH-InfoCommon >>spreadingFactor >>tfci-Existence >>pilotBits >>positionFixed  | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dl-DPCH-InfoCommon >>spreadingFactor >>tfci-Existence >>pilotBits >>positionFixed  | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dI-DPCH-InfoCommon >>spreadingFactor >>tfci-Existence >>pilotBits >>positionFixed  | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dl-DPCH-InfoCommon >>spreadingFactor >>tfci-Existence >>pilotBits >>positionFixed  PhyCH INFORMATION 3.84/7.68 Mcps TDD                              | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dI-DPCH-InfoCommon >>spreadingFactor >>tfci-Existence >>pilotBits >>positionFixed  PhyCH INFORMATION 3.84/7.68 Mcps TDD UL-DPCH-InfoPredef           | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dI-DPCH-InfoCommon >>spreadingFactor >>tfci-Existence >>pilotBits >>positionFixed  PhyCH INFORMATION 3.84/7.68 Mcps TDD                              | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dI-DPCH-InfoCommon >>spreadingFactor >>tfci-Existence >>pilotBits >>positionFixed  PhyCH INFORMATION 3.84/7.68 Mcps TDD UL-DPCH-InfoPredef >uI-DPCH- | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE  |
| PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence >puncturingLimit DL- CommonInformationPredef >dI-DPCH-InfoCommon >>spreadingFactor >>tfci-Existence >>pilotBits >>positionFixed  PhyCH INFORMATION 3.84/7.68 Mcps TDD UL-DPCH-InfoPredef           | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE | 1 dB<br>TRUE<br>0.88<br>128<br>FALSE  |

| >commonTimeslotInfo           |                   |                   |
|-------------------------------|-------------------|-------------------|
| >>secondInterleavingMode      | frameRelated      | frameRelated      |
| >>tfci-Coding                 | 16                | 16                |
| >>puncturingLimit             | 0.60              | 0.60              |
| >>repetitionPeriodAndLeng     | repetitionPeriod1 | repetitionPeriod1 |
| th                            |                   |                   |
| DL-                           |                   |                   |
| CommonInformationPredef       |                   |                   |
| >dl-DPCH-InfoCommon           |                   |                   |
| >>commonTimeslotInfo          |                   |                   |
| >>>secondInterleavingMod      | frameRelated      | frameRelated      |
| е                             |                   |                   |
| >>>tfci-Coding                | 16                | 16                |
| >>>puncturingLimit            | 0.60              | 0.60              |
| >>>repetitionPeriodAndLe      | repetitionPeriod1 | repetitionPeriod1 |
| ngth                          |                   |                   |
| PhyCH INFORMATION             |                   |                   |
| 1.28 Mcps TDD                 |                   |                   |
| UL-DPCH-InfoPredef            |                   |                   |
| >commonTimeslotInfo           |                   |                   |
| >>secondInterleavingMode      | frame Related     | frame Related     |
| >>tfci-Coding                 | 16                | 16                |
| >>puncturingLimit             | 0.64              | 0.64              |
| >>repetitionPeriodAndLeng th  | repetitionPeriod1 | repetitionPeriod1 |
| DL-                           |                   |                   |
| CommonInformationPredef       |                   |                   |
| >dl-DPCH-InfoCommon           |                   |                   |
| >>commonTimeslotInfo          |                   |                   |
| >>>secondInterleavingMod      | frame Related     | frame Related     |
| е                             |                   |                   |
| >>>tfci-Coding                | 16                | 16                |
| >>>puncturingLimit            | 0.64              | 0.64              |
| >>>repetitionPeriodAndLe ngth | repetitionPeriod1 | repetitionPeriod1 |

NOTE: Default configuration identity 11 can not be used with release 4 UEs.

| Configuration                   | 12.65/8.85/6.6 kbps                  |
|---------------------------------|--------------------------------------|
|                                 | speech +<br>3.4 kbps signalling      |
|                                 | + 0.15 kbps SRB#5                    |
| Ref 34.108                      | 62                                   |
| Default configuration           | 13                                   |
| identity                        |                                      |
| RB INFORMATION                  | DD4.4 DD2.2                          |
| rb-Identity                     | RB1: 1, RB2: 2,<br>RB3: 3, RB5: 5,   |
|                                 | RB6: 6, RB7: 7,                      |
|                                 | RB8: 8                               |
| rlc-InfoChoice                  | RIc-info                             |
| >ul-RLC-Mode                    | RB1: UM<br>RB2- RB3: AM              |
|                                 | RB5-RB7: TM                          |
| >>transmissionRLC-              | RB1: N/A                             |
| DiscardMode                     | RB2- RB3:                            |
|                                 | NoDiscard<br>RB5- RB7: N/A           |
| >>>maxDat                       | RB1: N/A                             |
|                                 | RB2- RB3: 15                         |
|                                 | RB5- RB7: N/A                        |
| >>transmissionWindowSiz         | RB1: N/A<br>RB2- RB3: 128 for        |
| е                               | UEs with more than                   |
|                                 | 10 kbyte "total RLC                  |
|                                 | AM buffer size" and                  |
|                                 | 32 otherwise                         |
| >>timerRST                      | RB5- RB7: N/A<br>RB1: N/A            |
| >>timerR51                      | RB2- RB3: 300                        |
|                                 | RB5- RB7: N/A                        |
| >>max-RST                       | RB1: N/A                             |
|                                 | RB2- RB3: 1                          |
| >>pollingInfo                   | RB5- RB7: N/A<br>RB1: N/A            |
| / >>poliniginilo                | RB2- RB3: as below                   |
|                                 | RB5- RB7: N/A                        |
| >>>lastTransmissionPDU-<br>Poll | RB2- RB3: FALSE                      |
| >>>lastRetransmissionPD U-Poll  | RB2- RB3: FALSE                      |
| >>>timerPollPeriodic            | RB2- RB3: 300                        |
| >>segmentationIndication        | RB1- RB3: N/A                        |
| >dl-RLC-Mode                    | RB5- RB7: FALSE<br>RB1: UM           |
| >u-IVEO-IVIOUE                  | RB2- RB3: AM                         |
|                                 | RB5- RB7: TM                         |
|                                 | RB8: TM                              |
| >>inSequenceDelivery            | RB1: N/A<br>RB2- RB3: TRUE           |
|                                 | RB5- RB7: N/A                        |
|                                 | RB8: N/A                             |
| >>receivingWindowSize           | RB1: N/A                             |
|                                 | RB2- RB3: 128 for UEs with more than |
|                                 | 10 kbyte "total RLC                  |
|                                 | AM buffer size" and                  |
|                                 | 32 otherwise                         |
|                                 | RB5- RB7: N/A                        |
| >>dl-RLC-StatusInfo             | RB8: N/A<br>RB1: N/A                 |
| ZZGI INEO-OLALUSIIIIU           | RB2- RB3: as below                   |
|                                 | RB5- RB7: N/A                        |
|                                 | RB8: N/A                             |

|                               | I   |
|-------------------------------|---|
| >>>timerStatusProhibit        | RB2- RB3: 100                             |
| >>>missingPDU-Indicator       | RB2- RB3: FALSE                           |
| >>>timerStatusPeriodic        | RB2- RB3: 300                             |
| >>segmentationIndication      | RB1- RB3: N/A                             |
| >>segmentationinuication      |   |
|                               | RB5- RB7: FALSE                           |
|                               | RB8: FALSE                                |
| rb-MappingInfo                |   |
| >UL-                          | OneLogicalChannel                         |
| LogicalChannelMappings        |   |
| >>ul-                         | Dch                                       |
|                               | DOIT                                      |
| TransportChannelType          | DD4 DD0 4                                 |
| >>>transportChannelIdentit    | RB1- RB3: 4                               |
| У                             | RB5: 1, RB6: 2,                           |
|                               | RB7: 3.                                   |
| >>logicalChannelIdentity      | RB1: 1, RB2: 2,                           |
|                               | RB3: 3                                    |
|                               | RB5- RB7: N/A                             |
| >>rlc-SizeList                | RB1- RB3:                                 |
| >>11C-312eList                | configured                                |
|                               |   |
|                               | RB5- RB7: N/A                             |
| >>mac-                        | RB1: 1, RB2: 2,                           |
| LogicalChannelPriority        | RB3: 3                                    |
|                               | RB5- RB7: 5                               |
| >DL-                          | -   |
| logicalChannelMappingList     |   |
|                               | One manning antique                       |
| >>Mapping option 1            | One mapping option                        |
| >>>dl-                        | Dch                                       |
| TransportChannelType          |   |
| >>>>transportChannellden      | RB1- RB3: 4                               |
| tity                          | RB5: 1, RB6: 2,                           |
|                               | RB7: 3, RB8: 5                            |
| >>>logicalChannelIdentity     | RB1: 1, RB2: 2,                           |
| >>>logicalCriainTellderitity  | RB3: 3                                    |
|                               |   |
|                               | RB5- RB7: N/A                             |
|                               | RB8: N/A                                  |
| TrCH INFORMATION PER          |   |
| TrCH                          |   |
| UL-                           |   |
| AddReconfTransChInfoList      |   |
| >Uplink transport channel     | dch                                       |
|                               | den                                       |
| type                          |   |
| >transportChannelIdentity     | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 4 |
|                               | TrCH3: 3, TrCH4: 4                        |
| >transportFormatSet           | DedicatedTransChT                         |
|                               | FS  |
| >>dynamicTF-information       | -   |
| >>>tf0/tf0,1                  | TrCU1: (0v70)                             |
| />>IIU/ IIU, I                | TrCH1: (0x72)                             |
|                               | TrCH2: (0x 181)                           |
|                               | TrCH3: (0x60)                             |
|                               | TrCH4: (0x144,                            |
|                               | 1x144)                                    |
| >>>rlcSize                    | BitMode                                   |
| >>>>sizeType                  | TrCH1: type 1: 72                         |
|                               |   |
|                               | TrCH2: type 2:                            |
|                               | part1= 6, part2= 5                        |
|                               | TrCH3: type1: 60                          |
|                               | TrCH4: 2: type 2,                         |
|                               | part1= 2, part2= 0                        |
|                               | (144)                                     |
| >>>numberOfTbSizeList         | TrCH1-3: Zero                             |
| 1                             |   |
|                               | LICH4: Zero one                           |
| >>> onicalChannell_ict        | TrCH4: Zero, one                          |
| >>>logicalChannelList         | All                                       |
| >>>logicalChannelList >>>tf 1 | All<br>TrCH1: (1x40)                      |
|                               | All<br>TrCH1: (1x40)<br>TrCH2: (1x 78)    |
|                               | All<br>TrCH1: (1x40)                      |

| >>>>numberOfTransportBl    | TrCH1: One   |
|----------------------------|--|
| ocks                       | TrCH2: One   |
|                            |  |
| >>>>rlc-Size               | TrCH1-2: BitMode                                       |
| >>>>sizeType               | TrCH1: 1: 40   |
|                            | TrCH2: 1: 78   |
| >>>>numberOfTbSizeList     | TrCH1-2: One   |
| >>>>logicalChannelList     | TrCH1: all   |
| >>>tf 2                    | TrCH1: (1x54)  |
|                            | TrCH2: (1x113)   |
|                            | TrCH3: N/A   |
|                            | TrCH4: N/A   |
| b0fT                       |  |
| >>>>numberOfTransportBl    | TrCH1: One   |
| ocks                       | TrCh2: One   |
| >>>>rlc-Size               | TrCH1: BitMode   |
| >>>>sizeType               | TrCH1: type 1: 54                                      |
|                            | TrCH2: type 1: 113                                     |
| >>>>numberOfTbSizeList     | TrCH1: One   |
|                            | TrCH2: One   |
| >>>>logicalChannelList     | TrCH1: all   |
|                            | TrCH1. all   |
| # 2                        |  |
| >>>tf 3                    | TrCH1: (1x64)  |
|                            | TrCH2: (1x181)   |
|                            | TrCH3: N/A   |
|                            | TrCH4: N/A   |
| >>>>numberOfTransportBl    | TrCH1: One   |
| ocks                       | TrCh2: One   |
| >>>rlc-Size                | TrCH1: BitMode   |
| >>>>sizeType               | TrCH1: type 1: 64                                      |
|                            | TrCH2: type 2:   |
|                            |  |
| - O(T) O: 1: (             | part1=6, part2= 5                                      |
| >>>>numberOfTbSizeList     | TrCH1: One   |
|                            | TrCH2: One   |
| >>>>logicalChannelList     | TrCH1: all   |
|                            | TrCH2: all   |
| >>>tf 4                    | TrCH1: (1x72)  |
|                            | TrCH2: N/A   |
|                            | TrCH3: N/A   |
|                            | TrCH4: N/A   |
| >>>>numberOfTransportBl    | TrCH1: One   |
| ocks                       |  |
| >>>rlc-Size                | TrCH1: BitMode   |
|                            | TrCH1: type 1: 72                                      |
| >>>>sizeType               |  |
| >>>>numberOfTbSizeList     | TrCH1: One   |
| >>>>logicalChannelList     | TrCH1: all   |
| >>semistaticTF-Information |  |
| >>>tti                     | TrCH1- TrCH3: 20                                       |
|                            | TrCH4: 40  |
| >>>channelCodingType       | Convolutional  |
| >>>codingRate              | TrCH1- TrCH3:  |
|                            | Third  |
|                            |  |
| weta Matalaina a Assili    | TrCH4: Third   |
| >>>rateMatchingAttribute   | TrCH1: 200   |
|                            | TrCH2: 190   |
|                            | TrCH3: 256   |
|                            | TrCH4: 170   |
| >>>crc-Size                | TrCH1: 12  |
|                            | TrCH2: 0   |
|                            | TrCH3: 0   |
|                            | TrCH4: 16  |
| DL-                        | -  |
| AddReconfTransChInfoList   |  |
| >Downlink transport        | dch  |
|                            | don  |
| channel type               | TrCU1. 4 TrCU0. 0                                      |
| >dl-                       | 110H1: 1, 1f0H2: 2,                                    |
|                            | T.O.D. O. T.O.D.                                       |
| TransportChannelIdentity   | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4:<br>4, TrCH5: 5 |

| >tfs-SignallingMode                  | Independent               |
|--------------------------------------|---------------------------|
| 7tis-Signallingivioue                | Only tf0 on TrCH1         |
|                                      | and tf0/tf1 on            |
|                                      | TrCH5 are different       |
|                                      | and shown below>          |
| >>transportFormatSet                 | and one will below?       |
| >>>dynamicTF-information             |                           |
| >>>tf0/ tf0,1                        | TrCH1: (1x0)              |
| 77710/110,1                          | TrCH5: (0x3, 1x3)         |
| >>>rlcSize                           | BitMode                   |
| >>>>sizeType                         | TrCH1: type 1: 0          |
| ************************************ | TrCH5: type 1: 3          |
| >>>>numberOfTbSizeList               | TrCH1: One                |
|                                      | TrCH5: Zero, one          |
| >>>>logicalChannelList               | All                       |
| >>>semistaticTF-                     | same as UL except         |
| Information                          | for TrCH5                 |
| >>>tti                               | TrCH5: 20                 |
| >>>channelCodingType                 | Convolutional             |
| >>>>codingRate                       | TrCH5: Third              |
| >>>rateMatchingAttribute             | TrCH5: 205                |
| >>>crc-Size                          | TrCH5: 8                  |
| >>ULTrCH-Id                          | TrCH1: 1, TrCH2: 2,       |
| ) > OETICIFIC                        | TrCH3: 3, TrCH4: 4,       |
| >dch-QualityTarget                   | 110110. 0, 110114. 4,     |
| >>bler-QualityValue                  | -3                        |
| >>blei-Quality value                 | TrCH1: 7x10 <sup>-3</sup> |
|                                      | TrCH2: Absent             |
|                                      | TrCH3: Absent             |
|                                      | TrCH4- TrCH5:             |
|                                      | Absent                    |
| TrCH INFORMATION, COMMON             |                           |
| ul-CommonTransChInfo                 |                           |
| >tfcs-ID (TDD only)                  | 1                         |
| >sharedChannelIndicator (TDD only)   | FALSE                     |
| > tfc-Subset                         | Absent, not required      |
| >ul-TFCS                             | Normal TFCI               |
| Jul-11 00                            | signalling                |
| >>explicitTFCS-                      | Complete                  |
| ConfigurationMode                    | Complete                  |
| >>>ctfcSize                          | Ctfc6Bit                  |
| >>>TFCS representation               | Addition                  |
| >>>>TFC list                         | Addition                  |
| >>>>TFC 1                            | (TF0, TF0, TF0,           |
|                                      | TF0)                      |
| >>>>>ctfc                            | 0                         |
| >>>>>gainFactorInform                | Computed                  |
| ation                                | Compatod                  |
| >>>>>referenceTFCId                  | 0                         |
| >>>>TFC 2                            | (TF1, TF0, TF0,           |
|                                      | TF0)                      |
| >>>>>ctfc                            | 1                         |
| >>>>>gainFactorInform                | Computed                  |
| ation                                | ·                         |
| >>>>>>βc (FDD only)                  | N/A                       |
| >>>>>βd                              | N/A                       |
| >>>>>>referenceTFCld                 | 0                         |
| >>>>TFC 3                            | (TF2, TF1, TF0,           |
|                                      | TF0)                      |
| >>>>>ctfc                            | 7                         |
| >>>>>gainFactorInform                | Computed                  |
| ation                                | '                         |
| >>>>>>referenceTFCld                 | 0                         |
|                                      |                           |

|                                       | ,                                |
|---------------------------------------|--|
| >>>>>TFC 4                            | (TF3, TF2, TF0,  |
|                                       | TF0)   |
| >>>>>ctfc                             | 13   |
| >>>>>gainFactorInform                 | Computed   |
|                                       | Computed   |
| ation                                 |  |
| >>>>>>βc (FDD only)                   |  |
| >>>>>βd                               |  |
|                                       | 0  |
| >>>>>>referenceTFCld                  | 0  |
| >>>>>TFC 5                            | (TF4, TF3, TF0,  |
|                                       | TF0)   |
| >>>>>ctfc                             | 19   |
| >>>>>gainFactorInform                 | Computed   |
| ation                                 | Compared   |
|                                       | 0  |
| >>>>>>referenceTFCld                  | 0  |
| >>>>>TFC 6                            | (TF0, TF0, TF0,  |
|                                       | TF1)   |
| >>>>>ctfc                             | 20   |
| >>>>>gainFactorInform                 | Computed   |
| ation                                 | Compatou   |
| _                                     |  |
| >>>>>>βc (FDD only)                   |  |
| >>>>>βd                               |  |
| >>>>>referenceTFCld                   | 0  |
| >>>>>TFC 7                            | _  |
| >>>>>IFU /                            | (TF1, TF0, TF0,  |
|                                       | TF1)   |
| >>>>>ctfc                             | 21   |
| >>>>>gainFactorInform                 | Computed   |
| ation                                 | ·  |
| >>>>>referenceTFCId                   | 0  |
| >>>>TFC 8                             | _  |
| >>>>> 1FC 8                           | (TF2, TF1, TF0,  |
|                                       | TF1)   |
| >>>>>ctfc                             | 27   |
| >>>>>gainFactorInform                 | computed   |
| ation                                 | ·  |
|                                       |  |
| >>>>>βc (FDD only)                    |  |
| >>>>>βd                               |  |
| >>>>>referenceTFCId                   | 0  |
| >>>>TFC 9                             | (TF3, TF2, TF0,  |
| 777771100                             | TF1)   |
|                                       |  |
| >>>>>ctfc                             | 33   |
| >>>>>gainFactorInform                 | computed   |
| ation                                 |  |
| >>>>>>referenceTFCId                  | 0  |
| >>>>TFC 10                            | (TF4, TF3, TF0,  |
| 1111111111111111111111111111111111111 | TF1)   |
|                                       | · · · · · · · · · · · · · · · · · · ·                                  |
| >>>>>ctfc                             | 39   |
| >>>>>gainFactorInform                 | signalled  |
| ation                                 |  |
| >>>>>βc (FDD only)                    | 11   |
|                                       | 15   |
| >>>>>βd                               |  |
| >>>>>>referenceTFCId                  | 0  |
| > TFC subset list                     |  |
| >>TFC subset 1                        | (speech rate 6.6)  |
| >>> Allowed transport                 | (TFC1, TFC2,   |
|                                       | TFC3, TFC6, TFC7,  |
| format combination list               |  |
|                                       | TFC8)  |
| >>TFC subset 2                        | (speech rate 8.85)   |
| >>> Allowed transport                 | (TFC1, TFC2,   |
| format combination list               | (TFC1, TFC2,<br>TFC3, TFC4, TFC6,                                      |
|                                       | TFC7, TFC8, TFC9)  |
| >>TFC subset 3                        |  |
| L >> LEG SUDSet 3                     | (speech rate 12.65)  |
|                                       | /==  |
| >>> Allowed transport                 | (TFC1, TFC2,   |
|                                       | TFC3, TFC4, TFC5,  |
| >>> Allowed transport                 | TFC3, TFC4, TFC5,  |
| >>> Allowed transport                 | (TFC1, TFC2,<br>TFC3, TFC4, TFC5,<br>TFC6, TFC7, TFC8,<br>TFC9, TFC10) |

| dl-CommonTransChInfo    |                              |
|-------------------------|------------------------------|
| >tfcs-SignallingMode    | Independent                  |
| ul-CommonTransChInfo    |                              |
| >tfcs-ID (TDD only)     | 1                            |
| >sharedChannelIndicator | FALSE                        |
| (TDD only)              |                              |
| > tfc-Subset            | Absent, not required         |
| >dl-TFCS                | Normal TFCI                  |
|                         | signalling                   |
| >>explicitTFCS-         | Complete                     |
| ConfigurationMode       |                              |
| >>>ctfcSize             | Ctfc8Bit                     |
| >>>>TFCS representation | Addition                     |
| >>>>TFCS list           |                              |
| >>>>TFC 1               | (TF0, TF0, TF0,              |
|                         | TF0, TF0)                    |
| >>>>>ctfc               | 0                            |
| >>>>TFC 2               | (TF1, TF0, TF0,              |
|                         | TF0, TF0)                    |
| >>>>>ctfc               | 1                            |
| >>>>TFC 3               | (TF2, TF1, TF0,              |
|                         | TF0, TF0)                    |
| >>>>>ctfc               | 7                            |
| >>>>TFC 4               | (TF3, TF2, TF0,              |
|                         | TF0, TF0)                    |
| >>>>>ctfc               | 13                           |
| >>>>TFC 5               | (TF4, TF3, TF0,              |
|                         | TF0, TF0)                    |
| >>>>>ctfc               | 19                           |
| >>>>TFC 6               | (TF0, TF0, TF0,              |
|                         | TF1, TF0)                    |
| >>>>>ctfc               | 20                           |
| >>>>TFC 7               | (TF1, TF0, TF0,              |
| -16-                    | TF1, TF0)                    |
| >>>>>ctfc               | 21<br>/TEQ TE4 TEQ           |
| >>>>TFC 8               | (TF2, TF1, TF0,<br>TF1, TF0) |
| otfo                    | 27                           |
| >>>>>ctfc<br>>>>>TFC 9  | (TF3, TF2, TF0,              |
| 333331FC 9              | TF1, TF0)                    |
| >>>>>ctfc               | 33                           |
| >>>>TFC 10              | (TF4, TF3, TF0,              |
| 7777711010              | TF1, TF0)                    |
| >>>>>ctfc               | 39                           |
| >>>>TFC 11              | (TF0, TF0, TF0,              |
|                         | TF0, TF1)                    |
| >>>>>ctfc               | 40                           |
| >>>>TFC 12              | (TF1, TF0, TF0,              |
|                         | TF0, TF1)                    |
| >>>>>ctfc               | 41                           |
| >>>>TFC 13              | (TF2, TF1, TF0,              |
|                         | TF0, TF1)                    |
| >>>>>ctfc               | 47                           |
| >>>>TFC 14              | (TF3, TF2, TF0,              |
|                         | TF0, TF1)                    |
| >>>>>ctfc               | 53                           |
| >>>>TFC 15              | (TF4, TF3, TF0,              |
|                         | TF0, TF1)                    |
| >>>>>ctfc               | 59                           |
| >>>>TFC 16              | (TF0, TF0, TF0,              |
|                         | TF1, TF1)                    |
| >>>>>ctfc               | 60                           |
| >>>>TFC 17              | (TF1, TF0, TF0,              |
|                         | TF1, TF1)                    |
| >>>>>ctfc               | 61                           |

| >>>>TFC 18              | (TF2, TF1, TF0,<br>TF1, TF1) |
|-------------------------|------------------------------|
| >>>>>ctfc               | 67                           |
| >>>>TFC 19              | (TF3, TF2, TF0,<br>TF1, TF1) |
| >>>>>ctfc               | 73                           |
| >>>>TFC 20              | (TF4, TF3, TF0,<br>TF1, TF1) |
| >>>>>ctfc               | 79                           |
| PhyCH INFORMATION FDD   |                              |
| UL-DPCH-InfoPredef      |                              |
| >ul-DPCH-               |                              |
| PowerControlInfo        |                              |
| >>powerControlAlgorithm | Algorithm 1                  |
| >>>tpcStepSize          | 1 dB                         |
| >tfci-Existence         | TRUE                         |
| >puncturingLimit        | 0.84                         |
| DL-                     |                              |
| CommonInformationPredef |                              |
| >dl-DPCH-InfoCommon     |                              |
| >>spreadingFactor       | 128                          |
| >>tfci-Existence        | FALSE                        |
| >>pilotBits             | 4                            |
| >>positionFixed         | Fixed                        |

| Configuration                     | 12.2/7.4/5.9/4.75<br>kbps speech + 3.4<br>kbps signalling<br>+ 0.15 kbps SRB#5 |
|-----------------------------------|--|
| Ref 34.108                        | 4b   |
| Default configuration identity    | 14   |
| RB INFORMATION                    |  |
| rb-Identity                       | RB1: 1, RB2: 2,<br>RB3: 3, RB5: 5,<br>RB6: 6, RB7: 7,<br>RB8: 8                |
| rlc-InfoChoice                    | RIc-info   |
| >ul-RLC-Mode                      | RB1: UM<br>RB2- RB3: AM<br>RB5-RB7: TM   |
| >>transmissionRLC-<br>DiscardMode | RB1: N/A<br>RB2- RB3:<br>NoDiscard<br>RB5- RB7: N/A                            |
| >>>maxDat                         | RB1: N/A<br>RB2- RB3: 25<br>RB5- RB7: N/A                                      |
| >>transmissionWindowSiz<br>e      | RB1: N/A<br>RB2- RB3: 32<br>RB5- RB7: N/A                                      |
| >>timerRST                        | RB1: N/A<br>RB2- RB3: 200<br>RB5- RB7: N/A                                     |
| >>max-RST                         | RB1: N/A<br>RB2- RB3: 1<br>RB5- RB7: N/A                                       |
| >>pollingInfo                     | RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A                                |
| >>>TimerPoll                      | RB2- RB3: 200  |
| >>>PolIPDU                        | RB2- RB3: n/a  |
| >>>PolISDU                        | RB2- RB3: 1  |

| Configuration                     | 12.2/7.4/5.9/4.75<br>kbps speech + 3.4 |
|-----------------------------------|--|
|                                   | kbps signalling<br>+ 0.15 kbps SRB#5   |
| >>>lastTransmissionPDU-           | RB2- RB3: FALSE                        |
| >>>lastRetransmissionPD<br>U-Poll | RB2- RB3: TRUE                         |
| >>>PollWindow                     | RB2- RB3: 99                           |
| >>segmentationIndication          | RB1- RB3: N/A                          |
| 3                                 | RB5- RB7: FALSE                        |
| >dl-RLC-Mode                      | RB1: UM                                |
|                                   | RB2- RB3: AM                           |
|                                   | RB5- RB7: TM                           |
|                                   | RB8: TM                                |
| >>inSequenceDelivery              | RB1: N/A                               |
|                                   | RB2- RB3: TRUE                         |
|                                   | RB5- RB8: N/A                          |
| >>receivingWindowSize             | RB1: N/A                               |
|                                   | RB2- RB3: 32                           |
|                                   | RB5- RB8: N/A                          |
| >>dl-RLC-StatusInfo               | RB1: N/A                               |
|                                   | RB2- RB3: as below                     |
|                                   | RB5- RB8: N/A                          |
| >>>timerStatusProhibit            | RB2- RB3: 100                          |
| >>>missingPDU-Indicator           | RB2- RB3: TRUE                         |
| >>segmentationIndication          | RB1- RB3: N/A                          |
| · ·                               | RB5- RB8: FALSE                        |
| rb-MappingInfo                    |  |
| >UL-                              | OneLogicalChannel                      |
| LogicalChannelMappings            | Ŭ                                      |
| >>ul-                             | Dch                                    |
| TransportChannelType              |  |
| >>>transportChannelIdenti         | RB1- RB3: 9                            |
| ty                                | RB5: 1, RB6: 2,                        |
|                                   | RB7: 3.<br>RB1: 1, RB2: 2,             |
| >>logicalChannelIdentity          | RB1: 1, RB2: 2,                        |
|                                   | RB3: 3                                 |
|                                   | RB5- RB7: N/A                          |
| >>rlc-SizeList                    | RB1- RB3:                              |
|                                   | configured                             |
|                                   | RB5- RB7: N/A                          |
| >>mac-                            | RB1: 1, RB2: 2,                        |
| LogicalChannelPriority            | RB3: 3                                 |
|                                   | RB5- RB7: 5                            |
| >DL-                              |  |
| IogicalChannelMappingList         |  |
| >>Mapping option 1                | One mapping option                     |
| >>>dl-                            | Dch                                    |
| TransportChannelType              | DD4 DD0 5                              |
| >>>>transportChannellden          | RB1- RB3: 9                            |
| tity                              | RB5: 1, RB6: 2,                        |
| la sia alOh III III               | RB7: 3, RB8: 5                         |
| >>>logicalChannelIdentity         | RB1: 1, RB2: 2,                        |
|                                   | RB3: 3                                 |
| TrOU INFORMATION                  | RB5- RB8: N/A                          |
| TrCH INFORMATION PER TrCH         |  |
|                                   |  |
| UL-<br>AddReconfTransChInfoLis    |  |
| t                                 |  |
| >Uplink transport channel         | dch                                    |
| type                              | uon                                    |
| >transportChannelIdentity         | TrCH1: 1, TrCH2: 2,                    |
|                                   | TrCH3: 3, TrCH4: 9                     |
| <u> </u>                          |  |

| Configuration               | 12.2/7.4/5.9/4.75   |
|-----------------------------|---|
| Configuration               | kbps speech + 3.4<br>kbps signalling<br>+ 0.15 kbps SRB#5 |
| >transportFormatSet         | DedicatedTransChT<br>FS                                   |
| >>dynamicTF-information     |   |
| >>>tf0/ tf0,1               | TrCH1: (0x81)   |
|                             | TrCH2: (0x 103)   |
|                             | TrCH3: (0x60)   |
|                             | TrCH4: (0x144,  |
| >>>rlcSize                  | 1x144)<br>BitMode   |
| >>>>sizeType                | TrCH1: type 1: 81   |
|                             | TrCH2: type 1: 103  |
|                             | TrCH3: type1: 60  |
|                             | TrCH4: 2: type 2,   |
|                             | part1= 2, part2= 0  |
|                             | (144)   |
| >>>>numberOfTbSizeList      | TrCH1-3: Zero<br>TrCH4: Zero, one                         |
| >>>logicalChannelList       | All   |
| >>>tf 1                     | TrCH1: (1x39)   |
|                             | TrCH2: (1x53)   |
|                             | TrCH3: (1x60)   |
|                             | TrCH4: (1x144)  |
| >>>numberOfTransportBl ocks | TrCH1-3: One  |
| >>>rlc-Size                 | TrCH1-3: BitMode  |
| >>>>sizeType                | TrCH1: 1: 39  |
|                             | TrCH2: 1: 53  |
|                             | TrCH3: 1: 60  |
| >>>numberOfTbSizeList       | TrCH1-3: One  |
| >>>>logicalChannelList      | TrCH1-3: all  |
| >>>tf 2                     | TrCH1: (1x42)<br>TrCH2: (1x63)                            |
|                             | TrCH3- TrCH4: N/A   |
| >>>>numberOfTransportBl     | TrCH1-2: One  |
| >>>rlc-Size                 | TrCH1: BitMode  |
| >>>>sizeType                | TrCH1: type 1: 42   |
|                             | TrCH2: type 1: 63   |
| >>>>numberOfTbSizeList      | TrCH1-2: One  |
| >>>>logicalChannelList      | TrCH1: all  |
| >>>tf 3                     | TrCH1: (1x55)   |
|                             | TrCH2: (1x87)<br>TrCH3- TrCH4: N/A                        |
| >>>>numberOfTransportBl     | TrCH1-2: One  |
| ocks                        |   |
| >>>rlc-Size                 | TrCH1: BitMode  |
| >>>>sizeType                | TrCH1: type 1: 55<br>TrCH2: type 1: 87                    |
| >>>>numberOfTbSizeList      | TrCH2. type 1. 67   |
| >>>logicalChannelList       | TrCH1: all  |
| >>>tf 4                     | TrCH1: (1x61)   |
|                             | TrCH2: (1x103)<br>TrCH3- TrCH4: N/A                       |
| >>>numberOfTransportBl      | TrCH1-2: One  |
| ocks                        | TrCU1: Di+Mada  |
| >>>rlc-Size<br>>>>>sizeType | TrCH1: BitMode TrCH1: type 1: 61                          |
| ////SIZE I YPE              | TrCH1: type 1: 61   |
| >>>>numberOfTbSizeList      | TrCH1-2: One  |
| >>>logicalChannelList       | TrCH1: all  |
| >>>tf 5                     | TrCH1: (1x81)   |
|                             | TrCH2- TrCH4: N/A   |

| Second   S                | Configuration                           | 12.2/7.4/5.9/4.75   |
|---|---|---------------------|
| >>>numberOfTransportBl ocks >>>size TrCH1: BitMode >>>>sizeType TrCH1: type 1: 81 >>>numberOfTbSizeList TrCH1: One >>>logicalChannelList TrCH1: all >>>semiStaticTF- Information TrCH1: TrCH3: 20 TrCH4: 40 >>>convolutional >>>tti TrCH1- TrCH3: 20 TrCH4: Third TrCH3: Half TrCH3: Half TrCH4: Third TrCH3: 235 TrCH4: 160 >>>crc-Size TrCH4: 160  >>>crc-Size TrCH1: 1, TrCH3: 0 TrCH4: 16  DL- AddReconfTransChInfoLis t  >Downlink transport channel type  >dl- TransportChannelIdentity TrCH3: 3, TrCH4: 9, TrCH5: 5  stfs-SignallingMode TrCH5: quantification of trCH2: and shown belows  >>stransportFormatSet  >>>stfs-SignallingMode TrCH1: (1x0) TrCH5: and shown belows  >>transportFormatSet  >>>stroughamicTF-information >>>stroughamicTF-information >>>sizeType TrCH5: 20 TrCH5: Spe 1: 3  TrCH6: (0x3, 1x3)  >>>slogicalChannelList all >>>semistaticTF-Information  >>>strinformation TrCH5: 20 TrCH5: Zero, one  3>>logicalChannelList all >>>schannelCodingType Convolutional TrCH5: 20  >>>schannelCodingType Convolutional TrCH5: 1, TrCH5: 20  >>>convolutional TrCH5: 1, TrCH6: 1, TrCH5: 20  TrCH5: TrCH5: TrCH6: 1, TrCH5: 20  TrCH5: TrCH6: 1, TrCH6: 205  TrCH6: 1, TrCH6: 1, TrCH6: 205  TrCH6: 3, TrCH6: 1, TrCH6: 205  TrCH6: 1, TrCH6: 205  TrCH6: 3, TrCH6: 1, TrCH6: 205  TrCH6: 3, TrCH6: 3, TrCH6: 1, TrCH6: 205  TrCH6: 3, TrCH6: 3, TrCH6: 3, TrCH6: 1, TrCH6: 205  TrCH6: Absent TrCH              |   |                     |
| >>>numberOfTransportBl ocks  >>>IrCH1: BitMode  >>>sizeType  >>>numberOfTbSizeList  >>>slogicalChannelList  >>>sti  IrCH1: One  TrCH1: Jype 1: 81  >>>semiStaticTF- Information  >>>ti  TrCH1: TrCH3: 20  TrCH4: 40  >>>convolutional  TrCH3: Half  TrCH3: Half  TrCH4: TrCH2: Third  TrCH3: 235  TrCH4: 160  >>>crc-Size  TrCH4: 160  TrCH4: 160  TrCH3: 235  TrCH4: 160  >>>crc-Size  TrCH4: 16  DL-  AddRecontTransChInfoLis t  >Downlink transport channel type  >dI-  TransportChannelIdentity  TrCH3: 3, TrCH4: 9, TrCH5: 5  Independent  |   |                     |
| ocks         TrCH1: BitMode           >>>>sizeType         TrCH1: type 1: 81           >>>>numberOfTbSizeList         TrCH1: type 1: 81           >>>>logicalChannelList         TrCH1: all           >>>semiStaticTF- Information         TrCH1: all           >>>tti         TrCH1- TrCH3: 20 TrCH4: 40           >>>codingRate         TrCH1- TrCH2: Third TrCH3: Half TrCH4: Third           >>>codingRate         TrCH1: 200 TrCH3: 235 TrCH4: 190 TrCH3: 235 TrCH4: 160           >>>crc-Size         TrCH1: 12 TrCH2: TrCH3: 0 TrCH4: 16           DL- AddReconfTransChInfoLis t         TrCH1: 17 TrCH3: 3, TrCH4: 9, TrCH5: 5           >tfs-SignallingMode         TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9, TrCH5: 5           >tfs-SignallingMode         Independent <ol> <li>Conly ff0 on TrCH1 and tf0/ff1 on TrCH5 are different and shown belows</li> </ol> >>tfo/f ff0,1         TrCH1: (1x0) TrCH5: (0x3, 1x3)           >>>rlcSize         bitMode           >>>>rlcSize         TrCH1: type 1: 0 TrCH5: Zero, one           >>>>logicalChannelList         all           >>>soodingRate         TrCH5: Third           >>>>codingRate         TrCH5: Third           >>>>crc-Size         TrCH5: Name           >>>logicalChangAttribute         TrCH5: Third           >>>>crte-Size         TrCH5: Third </th <th>&gt;&gt;&gt; numberOfTransportPI</th> <th></th>  | >>> numberOfTransportPI                 |                     |
| >>>>rlc-Size         TrCH1: BitMode           >>>>sizeType         TrCH1: type 1: 81           >>>>numberOfTbSizeList         TrCH1: One           >>>>logicalChannelList         TrCH1: all           >>>semiStaticTF-         TrCH1: TrCH3: 20           TrCH4: 40         TrCH3: 20           TrCH4: 40         TrCH3: 20           TrCH4: Third         TrCH4: TrCH2: Third           TrCH3: Half         TrCH4: Third           TrCH4: 190         TrCH3: 235           TrCH4: 190         TrCH4: 1200           TrCH3: 235         TrCH4: 160           >>>crc-Size         TrCH1: 12           TrCH2: 190         TrCH3: 235           TrCH4: 160           >>>crc-Size         TrCH4: 16           DL-         AddReconfTransChInfoLis           t         1           Obwnlink transport         1           channel type         1           >dl-         TrCH1: 1, TrCH2: 2,           TrCH3: 3, TrCH4: 9,         TrCH5: 5           TrCH5: 5         1           Independent            All-         1         TrCH5: 1, TrCH2: 2,           TrCH5 are different         and shown belows           >>transportFormatSet   |   | TIGITI. Offe        |
| >>>>sizeType  |   | TrCH1: BitMode      |
| >>>>numberOfTbSizeList TrCH1: One >>>logicalChannelList TrCH1: all >>>semiStaticTF- Information TrCH4: 40 >>>codingRate TrCH1- TrCH3: 20 TrCH4: 40 >>>codingRate TrCH1- TrCH2: Third TrCH3: Half TrCH4: Third TrCH3: 148 TrCH4: Third TrCH4: Third TrCH3: 235 TrCH4: 160 >>>crc-Size TrCH4: 16  DL- AddReconfTransChInfoLis t >Downlink transport channel type >dl- TransportChannelIdentity TrCH5: 5  >tfs-SignallingMode Independent <only and="" are="" below="" different="" on="" shown="" tf0="" tf1="" trch1="" trch5=""> &gt;&gt;tfrorestigner to the formation</only>  | >>>>sizeType                            |                     |
| >>semiStaticTF- Information  >>>tii   | >>>>numberOfTbSizeList                  | TrCH1: One          |
| Information   | >>>>logicalChannelList                  | TrCH1: all          |
| >>>tti  |   |                     |
| >>>codingRate   |   | TrCU4 TrCU2: 20     |
| >>>channelCodingType  | >>>tti                                  |                     |
| >>>codingRate TrCH1- TrCH2: Third TrCH3: Half TrCH4: Third TrCH4: Third TrCH4: Third TrCH4: Third TrCH2: 190 TrCH2: 190 TrCH2: 190 TrCH2: 190 TrCH2: 190 TrCH2: 190 TrCH3: 235 TrCH4: 160  >>>crc-Size TrCH4: 16  DL- AddReconfTransChInfoLis t  >Downlink transport channel type  >dl- TransportChannelIdentity TrCH3: 3, TrCH4: 9, TrCH5: 5  >tfs-SignallingMode Independent (Only tf0 on TrCH1 and tf0/ff1 on TrCH5 are different and shown below>  >>tfo/ tf0,1 TrCH1: (1x0) TrCH5: (0x3, 1x3)  >>>srlcSize bitMode  >>>slidode TrCH1: type 1: 0 TrCH5: type 1: 3  >>>snumberOfTbSizeList TrCH1: One TrCH5: Zero, one  >>>slogicalChannelList all  >>>semistaticTF- Information for TrCH5: 20  >>>>consoligate TrCH5: 20  >>>convolutional  >>>srateMatchingAttribute TrCH5: 20  >>>crc-Size TrCH5: 8  >>ULTrCH-Id TrCH5: 2  TrCH5: 1, TrCH2: 2, TrCH5: 20  >>>convolutional  TrCH5: TrCH5: 20  >>>cro-Size TrCH5: 8  >>ULTrCH-Id TrCH5: 20  TrCH5: Absent TrCH3: Absent TrCH3: Absent TrCH3: Absent TrCH3: Absent TrCH3: Absent TrCH3: Absent TrCH4: TrCH5: Absent TrCH4- TrCH5: Absent TrCH5: Absent TrCH5: Absent TrCH4- TrCH5- Absent              | >>>channelCodingType                    |                     |
| TrCH3: Half TrCH4: Third  >>>rateMatchingAttribute  TrCH1: 200 TrCH2: 190 TrCH3: 235 TrCH4: 160  >>>crc-Size  TrCH1: 12 TrCH2- TrCH3: 0 TrCH4: 16   DL- AddReconfTransChInfoLis t  >Downlink transport channel type  >dl- TransportChannelIdentity  >tfs-SignallingMode  TrCH1: 1, TrCH2: 2, TrCH5: 5  Independent <ol> <li>only tf0 on TrCH1 and tf0/tf1 on TrCH5 are different and shown below&gt;</li> </ol> >>trsnsportFormatSet  >>>dynamicTF-information  >>>tf0/ tf0,1  TrCH1: (1x0) TrCH5: (0x3, 1x3)  >>>rlcSize  bitMode  >>>snumberOfTbSizeList  TrCH1: type 1: 0 TrCH5: (ype 1: 3 TrCH1: One TrCH5: Zero, one TrCH5: Zero, one  >>>codingRate  >>>convolutional  >>>convolutional  >>>convolutional  TrCH5: 8  >>>crc-Size  TrCH5: 8  >>ULTrCH-Id  TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH3: Absent TrCH3: Absent TrCH3: Absent TrCH4: TrCH5: Absent TrCH5: TrCH5: Absent TrCH4: TrCH5: Absent TrCH4: TrCH5: Absent TrCH4: TrCH5: Absent TrCH3: Absent TrCH4: TrCH5: Absent TrCH5: Absent TrC |   |                     |
| >>>rateMatchingAttribute  |   |                     |
| >>>rateMatchingAttribute  |   |                     |
| TrCH2: 190 TrCH3: 235 TrCH4: 160  >>>crc-Size  TrCH1: 12 TrCH2- TrCH3: 0 TrCH4: 16  DL- AddReconfTransChInfoLis t  >Downlink transport channel type  >dI- TransportChannelIdentity  >tfs-SignallingMode  TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9, TrCH5: 5  Independent <ol> <li>conly tf0 on TrCH1 and tf0/tf1 on TrCH5 are different and shown below&gt;</li> </ol> >>tfo, ff0,1  TrCH1: (1x0) TrCH5: (0x3, 1x3)  >>>srlcSize  >>stroH1: type 1: 0 TrCH5: type 1: 3  >>>numberOfTbSizeList  TrCH1: One TrCH5: Zero, one all >>>stribformation  >>>stribformation  TrCH5: 20  >>>scodingRate  TrCH5: TrCH5: 20  >>>scodingRate  TrCH5: Third  >>>srateMatchingAttribute  TrCH5: 8  >>ULTrCH-Id  TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH5: Absent TrCH5: Absent TrCH5: Absent TrCH1: TrC |   |                     |
| TrCH3: 235 TrCH4: 160  >>>crc-Size  TrCH1: 12 TrCH2- TrCH3: 0 TrCH4: 16  DL- AddReconfTransChInfoLis t  >Downlink transport channel type  >dl- TransportChannelIdentity  TrCH3: 3, TrCH4: 9, TrCH5: 5  Independent <ol> <li>conly tf0 on TrCH1 and tf0/tf1 on TrCH5 are different and shown below&gt;</li> </ol> >>transportFormatSet  >>>dynamicTF-information  >>>stfo/ tf0,1  TrCH1: (1x0) TrCH5: (0x3, 1x3)  >>>sizeType  TrCH1: type 1: 0 TrCH5: type 1: 3  >>>numberOfTbSizeList  TrCH1: One TrCH5: Zero, one  >>>stiti  TrCH5: 20  >>>schannelCodingType  >>>scodingRate  TrCH5: 20  >>>convolutional TrCH5: TrCH5: R  >>>codingRate  TrCH5: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget  >bler-QualityValue  TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent Tr | >>>rateMatchingAttribute                |                     |
| TrCH4: 160  |   |                     |
| >>>crc-Size  TrCH1: 12 TrCH2- TrCH3: 0 TrCH4: 16  DL- AddReconfTransChInfoLis t  >Downlink transport channel type  >dl- TransportChannelIdentity  >tfs-SignallingMode  TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9, TrCH5: 5  Independent <only and="" are="" below="" different="" on="" shown="" tf0="" tf1="" trch1="" trch5="">  &gt;&gt;transportFormatSet  &gt;&gt;&gt;dynamicTF-information  &gt;&gt;&gt;tf0,1  TrCH1: (1x0) TrCH5: (0x3, 1x3)  &gt;&gt;&gt;srlcSize  bitMode  &gt;&gt;&gt;sizeType  TrCH1: type 1: 0 TrCH5: type 1: 3  TrCH1: one TrCH5: Zero, one  &gt;&gt;&gt;logicalChannelList  &gt;&gt;&gt;semistaticTF- Information  &gt;&gt;&gt;&gt;ti  &gt;&gt;&gt;codingRate  TrCH5: TrCH5: 20  &gt;&gt;&gt;convolutional  &gt;&gt;&gt;codingRate  TrCH5: 20  &gt;&gt;&gt;convolutional  TrCH5: 20  &gt;&gt;&gt;convolutional  TrCH5: 20  TrCH5: Third  TrCH5: 20  &gt;&gt;&gt;convolutional  TrCH5: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  &gt;dch-QualityTarget  &gt;&gt;bler-QualityValue  TrCH1: 7x10<sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH4- TrCH5: Absent</only>   |   | TrCH4: 160          |
| DL- AddReconfTransChInfoLis t  >Downlink transport channel type  >dl- TransportChannelIdentity  >tsfs-SignallingMode  >tfs-SignallingMode  >tfs-SignallingMode  >tfs-SignallingMode  >tfs-SignallingMode    TrCH1: 1, TrCH2: 2, TrCH5: 5   Independent  | >>>crc-Size                             | TrCH1: 12           |
| DL- AddReconfTransChInfoLis t  >Downlink transport channel type  >dl- TransportChannelIdentity  >tfs-SignallingMode  >tfs-SignallingMode    TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9, TrCH5: 5    TrCH5: 5    Independent   |   |                     |
| AddReconfTransChInfoLis t  >Downlink transport channel type  >dI- TrCH1: 1, TrCH2: 2, TrcH3: 3, TrCH4: 9, TrCH5: 5  >tfs-SignallingMode  Independent <only and="" are="" below="" different="" on="" shown="" tf0="" tf1="" trch1="" trch5="">  &gt;&gt;transportFormatSet  &gt;&gt;&gt;dynamicTF-information  &gt;&gt;&gt;tf0, tf0,1  TrCH1: (1x0) TrCH5: (0x3, 1x3)  &gt;&gt;&gt;sizeType  TrCH1: type 1: 0 TrCH5: type 1: 0 TrCH5: type 1: 3  &gt;&gt;&gt;numberOfTbSizeList  TrCH1: One TrCH5: Zero, one  &gt;&gt;&gt;logicalChannelList  &gt;&gt;&gt;semistaticTF- Information  &gt;&gt;&gt;&gt;tii TrCH5: 20  &gt;&gt;&gt;codingRate  TrCH5: Third  &gt;&gt;&gt;&gt;rateMatchingAttribute  TrCH5: 205  &gt;&gt;&gt;crc-Size  TrCH5: 8  &gt;&gt;ULTrCH-Id  TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  &gt;dch-QualityTarget  &gt;&gt;bler-QualityValue  TrCH1: 7x10<sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH4- TrCH5: Absent</only>   | DI                                      | 1rCH4: 16           |
| t   >Downlink transport channel type >dl- TransportChannelIdentity  >tfs-SignallingMode  >tfs-SignallingMode  >tfs-SignallingMode    Independent  |   |                     |
| >Downlink transport channel type >dl- TransportChannelIdentity  >tfs-SignallingMode  >tfs-SignallingMode  >tfs-SignallingMode  Independent <only and="" are="" below="" different="" on="" shown="" tf0="" tf1="" trch1="" trch5="">  &gt;&gt;transportFormatSet  &gt;&gt;dynamicTF-information  &gt;&gt;&gt;tfo/tf0,1  TrCH1: (1x0) TrCH5: (0x3, 1x3)  &gt;&gt;&gt;rlcSize  &gt;itMode  &gt;&gt;&gt;sizeType  TrCH1: type 1: 0 TrCH5: type 1: 3  TrCH5: Zero, one  &gt;&gt;&gt;logicalChannelList  &gt;&gt;semistaticTF- Information  &gt;&gt;&gt;ti TrCH5: 20  &gt;&gt;&gt;channelCodingType  &gt;&gt;&gt;scodingRate  &gt;&gt;&gt;scodingRate  &gt;&gt;&gt;convolutional  &gt;&gt;&gt;&gt;crc-Size  &gt;ULTrCH-Id  TrCH5: 20  TrCH5: 20  &gt;&gt;&gt;crc-Size  &gt;ULTrCH-Id  TrCH5: 20  TrCH5: 3, TrCH2: 2, TrCH3: 3, TrCH4: 9  &gt;dch-QualityTarget  &gt;&gt;bler-QualityValue  TrCH1: 7x10-3 TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH4- TrCH5: Absent</only>  |   |                     |
| channel type  >dl- TransportChannelIdentity  >tfs-SignallingMode  >tfs-SignallingMode    Independent  |   |                     |
| >tfs-SignallingMode   |   |                     |
| >tfs-SignallingMode   | ,                                       | TrCH1: 1, TrCH2: 2, |
| >tfs-SignallingMode  Independent  | TransportChannelIdentity                | TrCH3: 3, TrCH4: 9, |
| <pre></pre>   | >tfc SignallingMode                     |                     |
| and tf0/tf1 on TrCH5 are different and shown below>  >>transportFormatSet  >>>dynamicTF-information  >>>tf0/tf0,1  TrCH1: (1x0) TrCH5: (0x3, 1x3)  >>>rlcSize  >itMode  >>>sizeType  TrCH1: type 1: 0 TrCH5: type 1: 3  TrCH5: type 1: 3  TrCH5: Zero, one  >>>logicalChannelList  >>semistaticTF- Information  >>>ti  TrCH5: 20  >>>channelCodingType  Convolutional  >>>codingRate  TrCH5: TrCH5: 20  >>>crc-Size  TrCH5: 8  >>ULTrCH-Id  TrCH5: 8  >>ULTrCH-Id  TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget  >>bler-QualityValue  TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH4- TrCH5: Absent   | >tis-Signallingwode                     |                     |
| and shown below>  >>transportFormatSet  >>>dynamicTF-information  >>>tf0/tf0,1  TrCH1: (1x0) TrCH5: (0x3, 1x3)  >>>rlcSize  bitMode  >>>>sizeType  TrCH1: type 1: 0 TrCH5: type 1: 3  >>>numberOfTbSizeList  TrCH1: One TrCH5: Zero, one  >>>logicalChannelList  >>>semistaticTF- Information  >>>>ti  TrCH5: 20  >>>codingRate  TrCH5: Third  >>>rcH5: Third  >>>rcH5: Third  >>>rcH5: 8  >>ULTrCH-Id  TrCH5: 8  >>ULTrCH-Id  TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget  >>bler-QualityValue  TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent  TrCH4- TrCH5: Absent  |   |                     |
| >>transportFormatSet >>>dynamicTF-information >>>tf0/tf0,1 TrCH1: (1x0) TrCH5: (0x3, 1x3)  >>>rlcSize bitMode >>>>sizeType TrCH1: type 1: 0 TrCH5: type 1: 3  >>>numberOfTbSizeList TrCH1: One TrCH5: Zero, one >>>logicalChannelList >>semistaticTF- Information >>>ti TrCH5: 20 >>>>channelCodingType Convolutional >>>>codingRate TrCH5: Third >>>>rateMatchingAttribute TrCH5: 8  >>ULTrCH-Id TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget >>bler-QualityValue TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH4- TrCH5: Absent  |   |                     |
| >>>dynamicTF-information >>>>tf0/tf0,1 TrCH1: (1x0) TrCH5: (0x3, 1x3)  >>>>rlcSize bitMode  >>>>sizeType TrCH1: type 1: 0 TrCH5: type 1: 3  >>>>numberOfTbSizeList TrCH1: One TrCH5: Zero, one  >>>logicalChannelList all >>>semistaticTF- Information 5>>>ti TrCH5: 20 >>>>ti TrCH5: 20 >>>>channelCodingType Convolutional >>>>codingRate TrCH5: Third >>>>rateMatchingAttribute TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget >>bler-QualityValue TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH4- TrCH5: Absent   | 15 10 1                                 | and shown below>    |
| >>>stf0/tf0,1 TrCH1: (1x0) TrCH5: (0x3, 1x3)  >>>rlcSize bitMode  TrCH1: type 1: 0 TrCH5: type 1: 3  TrCH5: type 1: 3  TrCH5: Zero, one TrCH5: Zero, one  >>>logicalChannelList >>semistaticTF- Information >>>ti TrCH5: 20  >>>channelCodingType Convolutional >>>codingRate TrCH5: TrCH5: 20  >>>rateMatchingAttribute TrCH5: 205  >>>crc-Size TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget >>bler-QualityValue  TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH4- TrCH5: Absent  |   |                     |
| TrCH5: (0x3, 1x3)  >>>>rlcSize bitMode  TrCH1: type 1: 0 TrCH5: type 1: 3  TrCH5: type 1: 3  TrCH1: One TrCH5: Zero, one  >>>logicalChannelList all  >>>semistaticTF- Information for TrCH5  >>>>ti  TrCH5: 20  >>>channelCodingType Convolutional >>>>codingRate TrCH5: TrCH5: 205  >>>crc-Size TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget >>bler-QualityValue  TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent  TrCH4- TrCH5: Absent   |   | TrCH1: (1×0)        |
| >>>>rlcSize bitMode  >>>>sizeType TrCH1: type 1: 0 TrCH5: type 1: 3  >>>numberOfTbSizeList TrCH1: One TrCH5: Zero, one  >>>logicalChannelList all  >>>semistaticTF- Information for TrCH5  >>>tti TrCH5: 20  >>>channelCodingType Convolutional  >>>>codingRate TrCH5: Third  >>>>rateMatchingAttribute TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget  >>bitMode TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH2: Absent TrCH4- TrCH5: Absent TrCH4- TrCH5: Absent   | /////////////////////////////////////// |                     |
| >>>>sizeType TrCH1: type 1: 0 TrCH5: type 1: 3  >>>>numberOfTbSizeList TrCH1: One TrCH5: Zero, one  >>>logicalChannelList all >>>semistaticTF- Information for TrCH5 >>>>tti TrCH5: 20  >>>channelCodingType Convolutional >>>>codingRate TrCH5: Third >>>>rateMatchingAttribute TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget >>bler-QualityValue TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH4- TrCH5: Absent   | >>>rlcSize                              |                     |
| >>>>numberOfTbSizeList TrCH1: One TrCH5: Zero, one  >>>>logicalChannelList all  >>>semistaticTF- Information 5>>>ti TrCH5: 20  >>>>channelCodingType Convolutional TrCH5: Third  >>>>rateMatchingAttribute TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget >>bler-QualityValue  TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH4- TrCH5: Absent TrCH4- TrCH5: Absent TrCH4- TrCH5: Absent   | •                                       |                     |
| >>>logicalChannelList all >>>semistaticTF- Information for TrCH5 >>>tti TrCH5: 20 >>>>channelCodingType Convolutional >>>>codingRate TrCH5: Third >>>rateMatchingAttribute TrCH5: 8 >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9 >dch-QualityTarget >>bler-QualityValue TrCH3: Absent TrCH4: TrCH5: Absent TrCH4- TrCH5: Absent   |   | TrCH5: type 1: 3    |
| >>>>logicalChannelList all  >>>semistaticTF- Information for TrCH5  >>>>tti TrCH5: 20  >>>>channelCodingType Convolutional  >>>>codingRate TrCH5: Third  >>>>crc-Size TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget  >>bler-QualityValue TrCH3: Absent  TrCH4- TrCH5: Absent  TrCH4- TrCH5: Absent   | >>>>numberOfTbSizeList                  |                     |
| >>>semistaticTF- Information for TrCH5  >>>>tti TrCH5: 20  >>>channelCodingType Convolutional  >>>>codingRate TrCH5: Third  >>>srateMatchingAttribute TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget  >>bler-QualityValue TrCH2: Absent TrCH3: Absent  TrCH4- TrCH5: Absent  TrCH INFORMATION,  | >>> logicalChannell ist                 |                     |
| Information for TrCH5  >>>>tti TrCH5: 20  >>>>channelCodingType Convolutional  >>>>codingRate TrCH5: Third  >>>>rateMatchingAttribute TrCH5: 205  >>>crc-Size TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget  >>bler-QualityValue TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent  TrCH3: Absent  TrCH4- TrCH5: Absent  TrCH4- TrCH5: Absent  |   |                     |
| >>>>tti TrCH5: 20  >>>>channelCodingType Convolutional  >>>>codingRate TrCH5: Third  >>>>rateMatchingAttribute TrCH5: 205  >>>crc-Size TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget  >>bler-QualityValue TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent  TrCH3: Absent  TrCH4- TrCH5: Absent  TrCH INFORMATION,  |   | for TrCH5           |
| >>>>channelCodingType Convolutional >>>>codingRate TrCH5: Third >>>>rateMatchingAttribute TrCH5: 205 >>>crc-Size TrCH5: 8 >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9 >dch-QualityTarget >>bler-QualityValue TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH INFORMATION,  | •                                       | TrCH5: 20           |
| >>>>codingRate TrCH5: Third >>>>rateMatchingAttribute TrCH5: 205 >>>crc-Size TrCH5: 8 >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9 >dch-QualityTarget >>bler-QualityValue TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH INFORMATION,  | >>>channelCodingType                    | Convolutional       |
| >>>>crc-Size TrCH5: 8  >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget  >>bler-QualityValue TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH INFORMATION,   | >>>>codingRate                          |                     |
| >>ULTrCH-Id TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >dch-QualityTarget  >>bler-QualityValue TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH INFORMATION,  |   |                     |
| >dch-QualityTarget  >>bler-QualityValue  TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH INFORMATION,   |   |                     |
| >dch-QualityTarget  >>bler-QualityValue  TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH INFORMATION,   | >>ULTrCH-ld                             | TrCH1: 1, TrCH2: 2, |
| >>bler-QualityValue TrCH1: 7x10 <sup>-3</sup> TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH INFORMATION,  | >dch-QualityTarget                      | 11003.3, 110H4: 9   |
| TrCH2: Absent TrCH3: Absent TrCH4- TrCH5: Absent TrCH INFORMATION,  |   | T 0114 = 12-3       |
| TrCH3: Absent TrCH4- TrCH5: Absent TrCH INFORMATION,  | 22 DIOI Quality Value                   | IrCH1: 7x10 ~       |
| TrCH4- TrCH5: Absent  TrCH INFORMATION,   |   |                     |
| TrCH INFORMATION, Absent  |   |                     |
| TrCH INFORMATION,   |   |                     |
|   |   |                     |
| COMMON  | COMMON                                  |                     |

| Configuration                 | 12.2/7.4/5.9/4.75    |
|-------------------------------|----------------------|
| Jonniga. a.ion                | kbps speech + 3.4    |
|                               | kbps signalling      |
|                               | + 0.15 kbps SRB#5    |
| ul-CommonTransChInfo          |                      |
| >tfcs-ID (TDD only)           | 1                    |
| >sharedChannelIndicator       | FALSE                |
| (TDD only)                    | 1 / LOL              |
| >tfc-Subset                   | Absent, not required |
| >ul-TFCS                      | Normal TFCI          |
| >ui-1FC3                      | signalling           |
| >>explicitTFCS-               | Complete             |
|                               | Complete             |
| ConfigurationMode >>>ctfcSize | C+foOD:t             |
|                               | Ctfc8Bit<br>Addition |
| >>>TFCS representation        | Addition             |
| >>>>TFCS list                 | /TE0 TE0 TE0         |
| >>>>TFCS 1                    | (TF0, TF0, TF0,      |
|                               | TF0)                 |
| >>>>>ctfc                     | 0                    |
| >>>>>gainFactorInform         | Computed             |
| ation                         |                      |
| >>>>>>referenceTFCId          | 0                    |
| >>>>TFCS 2                    | (TF1, TF0, TF0,      |
|                               | TF0)                 |
| >>>>>ctfc                     | 1                    |
| >>>>>gainFactorInform         | Computed             |
| ation                         |                      |
| >>>>>βc (FDD only)            | N/A                  |
| >>>>>βd                       | N/A                  |
| >>>>>referenceTFCId           | 0                    |
| >>>>TFCS 3                    | •                    |
| >>>>> 1FC5 3                  | (TF2, TF1, TF0,      |
|                               | TF0)                 |
| >>>>>ctfc                     | 8                    |
| >>>>>gainFactorInform         | Computed             |
|                               | 0                    |
| >>>>>referenceTFCld           | (TE2 TE2 TE2         |
| >>>>> 1FG5 4                  | (TF3, TF2, TF0,      |
|                               | TF0)                 |
| >>>>>ctfc                     | 15                   |
| >>>>>gainFactorInform         | Computed             |
| ation                         | NI/A                 |
| >>>>>>βc (FDD only)           | N/A                  |
| >>>>>βd                       | N/A                  |
| >>>>>>referenceTFCId          | 0                    |
| >>>>>TFCS 5                   | (TF4, TF3, TF0,      |
|                               | TF0)                 |
| >>>>>ctfc                     | 22                   |
| >>>>>gainFactorInform         | Computed             |
| ation                         |                      |
| >>>>>>referenceTFCId          | 0                    |
| >>>>TFCS 6                    | (TF5, TF4, TF1,      |
|                               | TF0)                 |
| >>>>>ctfc                     | 59                   |
| >>>>>gainFactorInform         | Computed             |
| ation                         | 35                   |
| >>>>>βc (FDD only)            | N/A                  |
|                               | N/A                  |
| >>>>>βd                       |                      |
| >>>>>>referenceTFCId          | 0                    |
| >>>>TFCS 7                    | (TF0,TF0,TF0,TF1)    |
| >>>>>ctfc                     | 60                   |
| >>>>>gainFactorInform         | Computed             |
| ation                         |                      |
| >>>>>referenceTFCld           | 0                    |
| >>>>TFCS 8                    | (TF1,TF0,TF0,TF1)    |

| Configuration                                 | 12.2/7.4/5.9/4.75                 |
|---|-----------------------------------|
|   | kbps speech + 3.4                 |
|   | kbps signalling                   |
| >>>>>ctfc                                     | + 0.15 kbps SRB#5                 |
| >>>>>scitc                                    | Computed                          |
| ation   | Computed                          |
| >>>>>referenceTFCId                           | 0                                 |
| >>>>TFCS 9                                    | (TF2,TF1,TF0,TF1)                 |
| >>>>>ctfc                                     | 68                                |
| >>>>>gainFactorInform                         | Computed                          |
| ation   |                                   |
| >>>>>>referenceTFCId                          | 0                                 |
| >>>>TFCS 10                                   | (TF3,TF2,TF0,TF1)                 |
| >>>>>ctfc                                     | 75                                |
| >>>>>gainFactorInform                         | Computed                          |
| >>>>>βc (FDD only)                            | N/A                               |
| >>>>>βd                                       | N/A                               |
| >>>>>>referenceTFCId                          | 0                                 |
| >>>>TFCS 11                                   | (TF4,TF3,TF0,TF1)                 |
| >>>>>ctfc                                     | 82                                |
| >>>>>gainFactorInform                         | Computed                          |
| ation   | Computed                          |
| >>>>>referenceTFCld                           | 0                                 |
| >>>>TFCS 12                                   | (TF5,TF4,TF1,TF1)                 |
| >>>>>ctfc                                     | 119                               |
| >>>>>gainFactorInform                         | Signalled                         |
| ation   |                                   |
| >>>>>βc (FDD only)                            | 11                                |
| >>>>>βd                                       | 15                                |
| >>>>>>referenceTFCId                          | 0                                 |
| > TFC subset list                             |                                   |
| >>TFC subset 1                                | (speech rate 4.75)                |
| >>> Allowed transport                         | (TFC1, TFC2,                      |
| format combination list                       | TFC3, TFC7, TFC8,                 |
| TEO authoritio                                | TFC9)                             |
| >>TFC subset 2                                | (speech rate 5.9)<br>(TFC1, TFC2, |
| >>> Allowed transport format combination list | TFC3, TFC4, TFC7,                 |
| Torrial combination list                      | TFC8, TFC9,                       |
|   | TFC10)                            |
| >>TFC subset 3                                | (speech rate 7.4)                 |
| >>> Allowed transport                         | (TFC1, TFC2,                      |
| format combination list                       | TFC3, TFC4, TFC5,                 |
|   | TFC7, TFC8, TFC9,                 |
|   | TFC10, TFC11)                     |
| >>TFC subset 4                                | (speech rate 12.2)                |
| >>> Allowed transport                         | (TFC1, TFC2,                      |
| format combination list                       | TFC3, TFC4, TFC5,                 |
|   | TFC6, TFC7, TFC8, TFC9, TFC10,    |
|   | TFC9, TFC10,<br>TFC11, TFC12)     |
| dl-CommonTransChInfo                          | 11 011, 11 012)                   |
| >tfcs-SignallingMode                          | Independent                       |
| ul-CommonTransChInfo                          | aoponaoni                         |
| >tfcs-ID (TDD only)                           | 1                                 |
| >sharedChannelIndicator                       | FALSE                             |
| (TDD only)                                    |                                   |
| > tfc-Subset                                  | Absent, not required              |
| >dl-TFCS                                      | Normal TFCI                       |
|   | signalling                        |
| >>explicitTFCS-                               | Complete                          |
| ConfigurationMode                             | 0.4.00                            |
| >>>ctfcSize                                   | Ctfc8Bit                          |

| Configuration           | 12.2/7.4/5.9/4.75                    |
|-------------------------|--------------------------------------|
|                         | kbps speech + 3.4<br>kbps signalling |
|                         | + 0.15 kbps SRB#5                    |
| >>>TFCS representation  | Addition                             |
| >>>>TFCS list           |                                      |
| >>>>TFC 1               | (TF0, TF0, TF0,                      |
| -16-                    | TF0, TF0)                            |
| >>>>>ctfc<br>>>>>>TFC 2 | (TF1, TF0, TF0,                      |
| 777771102               | TF0, TF0)                            |
| >>>>>ctfc               | 1                                    |
| >>>>TFC 3               | (TF2, TF1, TF0,                      |
|                         | TF0, TF0)                            |
| >>>>>ctfc               | (TF3, TF2, TF0,                      |
|                         | TF0, TF0)                            |
| >>>>>ctfc               | 15                                   |
| >>>>TFC 5               | (TF4, TF3, TF0,                      |
| >>>>>ctfc               | TF0, TF0)                            |
| >>>>>TFC 6              | (TF5,TF4,TF1,TF0,                    |
|                         | TF0)                                 |
| >>>>>ctfc               | 59                                   |
| >>>>TFC 7               | (TF0, TF0, TF0,                      |
| >>>>>ctfc               | TF1, TF0)                            |
| >>>>TFC 8               | (TF1, TF0, TF0,                      |
|                         | TF1, TF0)                            |
| >>>>>ctfc               | 61                                   |
| >>>>TFC 9               | (TF2, TF1, TF0,                      |
| >>>>>ctfc               | TF1, TF0)<br>68                      |
| >>>>TFC 10              | (TF3, TF2, TF0,                      |
|                         | TF1, TF0)                            |
| >>>>>ctfc               | 75                                   |
| >>>>TFC 11              | (TF4, TF3, TF0,<br>TF1, TF0)         |
| >>>>>ctfc               | 82                                   |
| >>>>TFC 12              | (TF5,TF4,TF1,TF1,<br>TF0)            |
| >>>>>ctfc               | 119                                  |
| >>>>TFC 13              | (TF0, TF0, TF0,                      |
| >>>>>ctfc               | TF0, TF1)<br>120                     |
| >>>>TFC 14              | (TF1, TF0, TF0,                      |
|                         | TF0, TF1)                            |
| >>>>>ctfc               | 121                                  |
| >>>>TFC 15              | (TF2, TF1, TF0,<br>TF0, TF1)         |
| >>>>>ctfc               | 128                                  |
| >>>>TFC 16              | (TF3, TF2, TF0,                      |
|                         | TF0, TF1)                            |
| >>>>>ctfc               | 135                                  |
| >>>>TFC 17              | (TF4, TF3, TF0,<br>TF0, TF1)         |
| >>>>>ctfc               | 142                                  |
| >>>>TFC 18              | (TF5,TF4,TF1,TF0,<br>TF1)            |
| >>>>>ctfc               | 179                                  |
| >>>>TFC 19              | (TF0, TF0, TF0,<br>TF1, TF1)         |
| >>>>>ctfc               | 180                                  |
| >>>>TFC 20              | (TF1, TF0, TF0,                      |
|                         | TF1, TF1)                            |

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| Configuration                      | 12.2/7.4/5.9/4.75            |
|------------------------------------|------------------------------|
|                                    | kbps speech + 3.4            |
|                                    | kbps signalling              |
|                                    | + 0.15 kbps SRB#5            |
| >>>>>ctfc                          | 181                          |
| >>>>> 1FG 21                       | (TF2, TF1, TF0,<br>TF1, TF1) |
| >>>> otfo                          | 188                          |
| >>>>>ctfc                          | (TF3, TF2, TF0,              |
| 7777711022                         | TF1, TF1)                    |
| >>>>>ctfc                          | 195                          |
| >>>>TFC 23                         | (TF4, TF3, TF0,              |
|                                    | TF1, TF1)                    |
| >>>>>ctfc                          | 202                          |
| >>>>TFC 24                         | (TF5,TF4,TF1,TF1,            |
|                                    | TF1)                         |
| >>>>>ctfc                          | 239                          |
| PhyCH INFORMATION                  |                              |
| FDD<br>UL-DPCH-InfoPredef          |                              |
| >ul-DPCH-inioPredei                |                              |
| PowerControlInfo                   |                              |
| >>powerControlAlgorithm            | Algorithm 1                  |
| >>>tpcStepSize                     | 1 dB                         |
| >tfci-Existence                    | TRUE                         |
| >puncturingLimit                   | 0.84                         |
| DL-                                |                              |
| CommonInformationPrede             |                              |
| f                                  |                              |
| >dl-DPCH-InfoCommon                |                              |
| >>spreadingFactor                  | 128                          |
| >>tfci-Existence                   | FALSE                        |
| >>pilotBits >>positionFixed        | 4<br>Fixed                   |
| PhyCH INFORMATION                  | rixeu                        |
| 3.84/7.68 Mcps TDD                 |                              |
| UL-DPCH-InfoPredef                 |                              |
| >ul-DPCH-                          |                              |
| PowerControlInfo                   |                              |
| >>dpch-ConstantValue               |                              |
| >commonTimeslotInfo                |                              |
| >>secondInterleavingMod            |                              |
| е                                  |                              |
| >>tfci-Coding                      |                              |
| >>puncturingLimit                  |                              |
| >>repetitionPeriodAndLen           |                              |
| gth<br>DL-                         |                              |
| CommonInformationPrede             |                              |
| f                                  |                              |
| >dl-DPCH-InfoCommon                |                              |
| >>commonTimeslotInfo               |                              |
| >>>secondInterleavingMo            |                              |
| de                                 |                              |
| >>>tfci-Coding                     |                              |
| >>>puncturingLimit                 |                              |
| >>>repetitionPeriodAndLe           |                              |
| ngth                               |                              |
| PhyCH INFORMATION<br>1.28 Mcps TDD |                              |
| UL-DPCH-InfoPredef                 |                              |
| >commonTimeslotInfo                |                              |
| >>secondInterleavingMod            |                              |
| e                                  |                              |
| >>tfci-Coding                      |                              |
|                                    |                              |

| Configuration            | 12.2/7.4/5.9/4.75<br>kbps speech + 3.4<br>kbps signalling<br>+ 0.15 kbps SRB#5 |
|--------------------------|--|
| >>puncturingLimit        |  |
| >>repetitionPeriodAndLen |  |
| gth                      |  |
| DL-                      |  |
| CommonInformationPrede   |  |
| f                        |  |
| >dl-DPCH-InfoCommon      |  |
| >>commonTimeslotInfo     |  |
| >>>secondInterleavingMo  |  |
| de                       |  |
| >>>tfci-Coding           |  |
| >>>puncturingLimit       |  |
| >>>repetitionPeriodAndLe |  |
| ngth                     |  |

| Configuration                     | 7.95 kbps speech                                     |
|-----------------------------------|--|
|                                   | 3.4 kbps signalling                                  |
| Ref 34.108                        | 6  |
| Default configuration identity    | 15   |
| RB INFORMATION                    |  |
| rb-Identity                       | RB1: 1, RB2: 2,<br>RB3: 3, RB5: 5,<br>RB6: 6, RB7: 7 |
| rlc-InfoChoice                    | RIc-info   |
| >ul-RLC-Mode                      | RB1: UM<br>RB2- RB3: AM<br>RB5-RB7: TM               |
| >>transmissionRLC-<br>DiscardMode | RB1: N/A<br>RB2- RB3:<br>NoDiscard<br>RB5- RB7: N/A  |
| >>>maxDat                         | RB1: N/A<br>RB2- RB3: 25<br>RB5- RB7: N/A            |
| >>transmissionWindowSiz<br>e      | RB1: N/A<br>RB2- RB3: 32<br>RB5- RB7: N/A            |
| >>timerRST                        | RB1: N/A<br>RB2- RB3: 200<br>RB5- RB7: N/A           |
| >>max-RST                         | RB1: N/A<br>RB2- RB3: 1<br>RB5- RB7: N/A             |
| >>pollingInfo                     | RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A      |
| >>>TimerPoll                      | RB2- RB3: 200  |
| >>>PolIPDU                        | RB2- RB3: n/a  |
| >>>PolISDU                        | RB2- RB3: 1  |
| >>>lastTransmissionPDU-<br>Poll   | RB2- RB3: FALSE                                      |
| >>>lastRetransmissionPD U-Poll    | RB2- RB3: TRUE                                       |
| >>>PollWindow                     | RB2- RB3: 99   |
| >>segmentationIndication          | RB1- RB3: N/A<br>RB5- RB7: FALSE                     |

| Configuration                                  | 7.95 kbps speech                 |
|--|----------------------------------|
|  | 3.4 kbps signalling              |
| >dl-RLC-Mode                                   | RB1: UM                          |
|  | RB2- RB3: AM<br>RB5- RB7: TM     |
| >>inSequenceDelivery                           | RB1: N/A                         |
|  | RB2- RB3: TRUE                   |
|  | RB5- RB7: N/A                    |
| >>receivingWindowSize                          | RB1: N/A<br>RB2- RB3: 32         |
|  | RB5- RB7: N/A                    |
| >>dl-RLC-StatusInfo                            | RB1: N/A                         |
|  | RB2- RB3: as below               |
| timorCtotusDrohibit                            | RB5- RB7: N/A                    |
| >>>timerStatusProhibit >>>missingPDU-Indicator | RB2- RB3: 100<br>RB2- RB3: TRUE  |
| >>segmentationIndication                       | RB1- RB3: N/A                    |
|  | RB5- RB7: FALSE                  |
| rb-MappingInfo                                 |                                  |
| >UL-   | OneLogicalChannel                |
| LogicalChannelMappings >>ul-                   | Dch                              |
| TransportChannelType                           | Don                              |
| >>>transportChannelIdentit                     | RB1- RB3: 9                      |
| У  | RB5: 1, RB6: 2,                  |
| >>logicalChannelIdentity                       | RB7: 3<br>RB1: 1, RB2: 2,        |
| >>logicalCharmenderitity                       | RB3: 3                           |
|  | RB5- RB7: N/A                    |
| >>rlc-SizeList                                 | RB1- RB3:                        |
|  | configured                       |
| >>mac-   | RB5- RB7: N/A<br>RB1: 1, RB2: 2, |
| LogicalChannelPriority                         | RB3: 3                           |
|  | RB5- RB7: 5                      |
| >DL-<br>logicalChannelMappingList              |                                  |
| >>Mapping option 1                             | One mapping option               |
| >>>dl-   | Dch                              |
| TransportChannelType                           |                                  |
| >>>>transportChannellden                       | RB1- RB3: 9                      |
| tity   | RB5: 1, RB6: 2,<br>RB7: 3        |
| >>>logicalChannelIdentity                      | RB1: 1, RB2: 2,                  |
|  | RB3: 3                           |
| TrCH INFORMATION PER                           | RB5- RB7: N/A                    |
| TrCH   |                                  |
| UL-  |                                  |
| AddReconfTransChInfoList                       |                                  |
| >Uplink transport channel                      | dch                              |
| type >transportChannelIdentity                 | TrCH1: 1, TrCH2: 2,              |
| - transporterial interior                      | TrCH3:3, TrCH4: 9                |
| >transportFormatSet                            | DedicatedTransChT                |
| don and TE ( C )                               | FS                               |
| >>dynamicTF-information<br>>>>tf0/ tf0,1       | TrCH1: (0x75)                    |
|  | TrCH2: (0x/3)                    |
|  | 1x84)                            |
|  | TrCH3: (0x 60)                   |
|  | TrCH4: (0x144,<br>1x144)         |
| >>>>rlcSize                                    | BitMode                          |
|  |                                  |

| Configuration                     | 7.95 kbps speech   |
|-----------------------------------|--|
|                                   | 3.4 kbps signalling  |
| >>>>sizeType                      | TrCH1: type 1: 75  |
|                                   | TrCH2: type 1: 84  |
|                                   | TrCH3: type 1: 60  |
|                                   | TrCH4: 2: type 2,  |
|                                   | part1= 2, part2= 0   |
|                                   | (144)  |
| >>>>numberOfTbSizeList            | TrCH1: Zero  |
| 1 101 111                         | TrCH2-4: Zero, one   |
| >>>logicalChannelList             | All  |
| >>>tf 1                           | TrCH1: (1x39)  |
| Of Transport Of Di                | TrCH2- TrCH4: N/A TrCH1: One   |
| >>>numberOfTransportBl ocks       | Tront: One   |
| >>>rlc-Size                       | TrCH1: BitMode   |
| >>>>sizeType                      | TrCH1: 1: 39   |
| >>>>numberOfTbSizeList            | TrCH1: One   |
| >>>logicalChannelList             | TrCH1: all   |
| >>>tf 2                           | TrCH1: (1x75)  |
| >>ti 2                            | TrCH2- TrCH4: N/A  |
| >>>>numberOfTransportBl           | TrCH1: One   |
| ocks                              | 1101111 0110   |
| >>>rlc-Size                       | TrCH1: BitMode   |
| >>>>sizeType                      | TrCH1: type 1: 75  |
| >>>numberOfTbSizeList             | TrCH1: One   |
| >>>>logicalChannelList            | TrCH1: all   |
| >>semistaticTF-Information        |  |
| >>>tti                            | TrCH1- TrCH3: 20   |
|                                   | TrCH4: 40  |
| >>>channelCodingType              | Convolutional  |
| >>>codingRate                     | TrCH1- TrCH2:  |
|                                   | Third  |
|                                   | TrCH3: Half  |
| 0 - 4 - B A - 4 - b i A 44-ib 4 - | TrCH4: Third   |
| >>>rateMatchingAttribute          | TrCH1: 200<br>TrCH2: 190   |
|                                   | TrCH3: 235   |
|                                   | TrCH4: 160   |
| >>>crc-Size                       | TrCH1: 12  |
| 777 010 0120                      | TrCH2-TrCH3: 0   |
|                                   | TrCH4: 16  |
| DL-                               |  |
| AddReconfTransChInfoList          |  |
| >Downlink transport               | Dch  |
| channel type                      |  |
| >dl-                              | TrCH1: 1, TrCH2: 2,  |
| TransportChannelIdentity          | TrCH3: 3, TrCH4: 9   |
| (should be as for UL)             | F 1: 1:  |
| >tfs-SignallingMode               | Explicit   |
|                                   | <only and<="" different="" is="" on="" td="" tf0="" trch1=""></only> |
|                                   | shown below>   |
| >>transportFormatSet              | DedicatedTransChT  |
| >transporti offiatoet             | FS   |
| >>>dynamicTF-information          |  |
| >>>tf0/ tf0,1                     | TrCH1: (1x0)   |
| >>>rlcSize                        | BitMode  |
| >>>>sizeType                      | TrCH1: type 1: 0   |
| >>>numberOfTbSizeList             | TrCH1: One   |
| >>>logicalChannelList             | All  |
| >>ULTrCH-Id                       | TrCH1: 1, TrCH2: 2,  |
|                                   | TrCH3:3, TrCH4: 9  |
| >dch-QualityTarget                |  |
|                                   |  |

| Configuration                      | 7.95 kbps speech        |
|------------------------------------|-------------------------|
|                                    | 3.4 kbps signalling     |
| >>bler-QualityValue                | TrCH1: 7x10-3           |
|                                    | TrCH2- TrCH4:           |
|                                    | Absent                  |
| TrCH INFORMATION,                  |                         |
| COMMON                             |                         |
| ul-CommonTransChInfo               |                         |
| >tfcs-ID (TDD only)                | 1                       |
| >sharedChannelIndicator (TDD only) | FALSE                   |
| >tfc-Subset                        | Absent, not required    |
| >ul-TFCS                           | Normal TFCI             |
| " "=====                           | signalling              |
| >>explicitTFCS-                    | Complete                |
| ConfigurationMode                  | Off - 4Dit              |
| >>>ctfcSize                        | Ctfc4Bit                |
| >>>>TFCS representation            | Addition                |
| >>>>TFCS list                      | /TEO TEO TEO            |
| >>>>> IFUO 1                       | (TF0, TF0, TF0, TF0)    |
| >>>>>ctfc                          | 0                       |
| >>>>>sciic                         | Computed                |
| ation                              | Compated                |
| >>>>>referenceTFCId                | 0                       |
| >>>>TFCS 2                         | (TF1, TF0, TF0,         |
| 7777711 00 2                       | TF0)                    |
| >>>>>ctfc                          | 1                       |
| >>>>>gainFactorInform              | Computed                |
| ation                              |                         |
| >>>>>βc (FDD only)                 | N/A                     |
| >>>>>βd                            | N/A                     |
| >>>>>referenceTFCld                | 0                       |
| >>>>TFCS 3                         | (TF2, TF1, TF0,         |
| - 46 -                             | TF0)                    |
| >>>>>ctfc                          | 5                       |
| >>>>>gainFactorInform ation        | Computed                |
| >>>>>referenceTFCId                | 0                       |
| >>>>TFCS 4                         | (TF0, TF0, TF0,         |
|                                    | TF1)                    |
| >>>>>CtfC                          | 6                       |
| >>>>>gainFactorInform ation        | Computed                |
| >>>>>βc (FDD only)                 | N/A                     |
| >>>>>βd                            | N/A                     |
| >>>>>referenceTFCld                | 0                       |
| >>>>TFCS 5                         | (TF1, TF0, TF0,<br>TF1) |
| >>>>>ctfc                          | 7                       |
| >>>>>gainFactorInform              | Computed                |
| ation                              | 1                       |
| >>>>>referenceTFCId                | 0                       |
| >>>>TFCS 6                         | (TF2, TF1, TF0,<br>TF1) |
| >>>>>ctfc                          | 11                      |
| >>>>>gainFactorInform              | Signalled               |
| ation                              |                         |
| >>>>>βc (FDD only)                 | 11                      |
| >>>>>βd                            | 15                      |
| >>>>>referenceTFCld                | 0                       |
| dl-CommonTransChInfo               | -                       |
|                                    |                         |

| Configuration                           | 7.95 kbps speech         |  |
|---|--------------------------|--|
|   | +<br>3.4 kbps signalling |  |
| >tfcs-SignallingMode                    | Same as UL               |  |
| PhyCH INFORMATION                       |                          |  |
| FDD                                     |                          |  |
| UL-DPCH-InfoPredef                      |                          |  |
| >ul-DPCH-                               |                          |  |
| PowerControlInfo                        |                          |  |
| >>powerControlAlgorithm                 | Algorithm 1              |  |
| >>>tpcStepSize                          | 1 dB                     |  |
| >tfci-Existence                         | TRUE                     |  |
| >puncturingLimit                        | 0.96                     |  |
| DL-                                     |                          |  |
| CommonInformationPredef                 |                          |  |
| >dl-DPCH-InfoCommon                     | 400                      |  |
| >>spreadingFactor                       | 128                      |  |
| >>tfci-Existence                        | FALSE                    |  |
| >>pilotBits                             | 4<br>Fig. 4              |  |
| >>positionFixed                         | Fixed                    |  |
|   |                          |  |
| PhyCH INFORMATION<br>3.84/7.68 Mcps TDD |                          |  |
| UL-DPCH-InfoPredef                      |                          |  |
| >ul-DPCH-inioPredei                     |                          |  |
| PowerControlInfo                        |                          |  |
| >>dpch-ConstantValue                    | 0                        |  |
| >commonTimeslotInfo                     |                          |  |
| >>secondInterleavingMode                | frameRelated             |  |
| >>tfci-Coding                           | 16                       |  |
| >>puncturingLimit                       | 0.52                     |  |
| >>repetitionPeriodAndLeng               | repetitionPeriod1        |  |
| th                                      | Topolition onout         |  |
| DL-                                     |                          |  |
| CommonInformationPredef                 |                          |  |
| >dl-DPCH-InfoCommon                     |                          |  |
| >>commonTimeslotInfo                    |                          |  |
| >>>secondInterleavingMod                | frameRelated             |  |
| е                                       |                          |  |
| >>>tfci-Coding                          | 16                       |  |
| >>>puncturingLimit                      | 0.52                     |  |
| >>>repetitionPeriodAndLe                | repetitionPeriod1        |  |
| ngth                                    |                          |  |
| PhyCH INFORMATION                       |                          |  |
| 1.28 Mcps TDD                           |                          |  |
| UL-DPCH-InfoPredef                      |                          |  |
| >commonTimeslotInfo                     |                          |  |
| >>secondInterleavingMode                | frameRelated             |  |
| >>tfci-Coding                           | 16                       |  |
| >>puncturingLimit                       | 0.80                     |  |
| >>repetitionPeriodAndLeng               | repetitionPeriod1        |  |
| th<br>DL-                               |                          |  |
| CommonInformationPredef                 |                          |  |
| >dl-DPCH-InfoCommon                     |                          |  |
| >>commonTimeslotInfo                    |                          |  |
| >>>secondInterleavingMod                | frameRelated             |  |
| e                                       | namervelated             |  |
| >>>tfci-Coding                          | 16                       |  |
| >>>puncturingLimit                      | 0.80                     |  |
| >>>repetitionPeriodAndLe                | repetitionPeriod1        |  |
| ngth                                    |                          |  |
|   |                          |  |

| Configuration             | 12.65/8.85/6.6 kbps<br>speech + |
|---------------------------|---------------------------------|
|                           | 3.4 kbps signalling             |
|                           | (without SRB#5)                 |
| Ref 25.993                | 7.1.106                         |
| Default configuration     | 16                              |
| identity                  |                                 |
| RB INFORMATION            |                                 |
| rb-Identity               | RB1: 1, RB2: 2,                 |
| 12 raeminy                | RB3: 3, RB5: 5,                 |
|                           | RB6: 6, RB7: 7,                 |
| rlc-InfoChoice            | RIc-info                        |
| >ul-RLC-Mode              | RB1: UM                         |
|                           | RB2- RB3: AM                    |
|                           | RB5-RB7: TM                     |
| >>transmissionRLC-        | RB1: N/A                        |
| DiscardMode               | RB2- RB3:                       |
|                           | NoDiscard                       |
|                           | RB5- RB7: N/A                   |
| >>>maxDat                 | RB1: N/A                        |
|                           | RB2- RB3: 25                    |
|                           | RB5- RB7: N/A                   |
| >>transmissionWindowSiz   | RB1: N/A                        |
| е                         | RB2- RB3: 32                    |
|                           | RB5- RB7: N/A                   |
| >>timerRST                | RB1: N/A                        |
|                           | RB2- RB3: 200                   |
| DOT                       | RB5- RB7: N/A                   |
| >>max-RST                 | RB1: N/A<br>RB2- RB3: 1         |
|                           | RB5- RB7: N/A                   |
| >>pollingInfo             | RB1: N/A                        |
| >>poliniginio             | RB2- RB3: as below              |
|                           | RB5- RB7: N/A                   |
| >>>TimerPoll              | RB2- RB3: 200                   |
| >>>PolIPDU                | RB2- RB3: n/a                   |
| >>>PollSDU                | RB2- RB3: 1                     |
| >>>lastTransmissionPDU-   | RB2- RB3: FALSE                 |
| Poll                      |                                 |
| >>>lastRetransmissionPD   | RB2- RB3: TRUE                  |
| U-Poll                    |                                 |
| >>>PollWindow             | RB2- RB3: 99                    |
| >>segmentationIndication  | RB1- RB3: N/A                   |
|                           | RB5- RB7: FALSE                 |
| >dl-RLC-Mode              | RB1: UM                         |
|                           | RB2- RB3: AM                    |
|                           | RB5- RB7: TM                    |
| >>inSequenceDelivery      | RB1: N/A                        |
|                           | RB2- RB3: TRUE                  |
|                           | RB5- RB7: N/A                   |
| >>receivingWindowSize     | RB1: N/A                        |
|                           | RB2- RB3: 32                    |
| dl DLC Oteturista         | RB5- RB7: N/A                   |
| >>dl-RLC-StatusInfo       | RB1: N/A<br>RB2- RB3: as below  |
|                           | RB5- RB7: N/A                   |
| >>>timerStatusProhibit    | RB2- RB3: 100                   |
| >>>missingPDU-Indicator   | RB2- RB3: TRUE                  |
| >>segmentationIndication  | RB1- RB3: N/A                   |
| -/3egmentationillulcation | RB5- RB7: FALSE                 |
| rb-MappingInfo            | 1.50 1.51.17.LOL                |
| >UL-                      | OneLogicalChannel               |
| LogicalChannelMappings    | 3.1020giodiOndinio              |
| >>ul-                     | Dch                             |
| TransportChannelType      | -                               |
|                           | •                               |

| >>>transportChannelIdentity y RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3 RB5- RB7: N/A RB1- RB3: configured RB5- RB7: N/A RB1- RB3: 3 RB5- RB7: N/A RB1- RB3: configured RB5- RB7: N/A RB1- RB3: 3 RB5- RB7: N/A  >>mac- LogicalChannelPriority RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A  >>DL- logicalChannelMappingList  >>Mapping option 1  >>>dl- transportChannelType  >>>systransportChannelIden tity RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3,  >>>logicalChannelIdentity RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3,  RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3,  RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3,  RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3,  RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3,  RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3,  RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3,  TrCH INFORMATION PER TrCH  UL- AddReconfTransChInfoList  >Uplink transport channel type  >transportChannelIdentity TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9  >>ddicatedTransChT FS  >>dynamicTF-information  >>>trocha: (0x144, 1x144)  >>>>rCH2: (type 2; part1= 6, part2= 5 TrCH3: type 1: 72 TrCH2: (type 2; part1= 6, part2= 5 TrCH3: type 1: 72 TrCH2: type 2; part1= 2, part2= 0 (144)  >>>>logicalChannelList All  >>>>trCH1: (1x40) TrCH2: Cone TrCH4: Zero, one TrCH4: Zero, one TrCH4: Zero, one TrCH4: Cone TrCH4: Cone TrCH2: Cone TrCH2: Cone TrCH2: DistMode  >>>>rCH1: 1: 140 TrCH2: 1: 78 TrCH1: 1: 140 TrCH2: 1: 78  >>>>numberOfTbSizeList TrCH1: 1: 140 TrCH2: 1: 78  >>>>numberOfTbSizeList TrCH1: (1x41) TrCH2: (1x41) TrCH2: (1x113) TrCH3: N/A TrCH4: N/A TrCH4: N/A TrCH4: N/A   | -   |   |
|--|---|---|
| Section   Sect | •   | RB1- RB3: 9   |
| Section  | ,   |   |
| >>logicalChannelIdentity RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A >>rlc-SizeList RB1- RB3: configured RB5- RB7: N/A >>mac- RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A  >DL- logicalChannelPriority RB3: 3 RB5- RB7: N/A  >DL- logicalChannelMappingList S-Mapping option 1 One mapping option 1 >>>dl- TransportChannelIden tity RB1: 1, RB2: 2, RB7: 3, RB5: 1, RB6: 2, RB7: 3, RB5- RB7: N/A  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList S-Uplink transport channel type >transportChannelIdentity TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9 >transportFormatSet DedicatedTransChT FS >>dynamicTF-information S->>tf0/tf0,1 TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144) >>>>rlcSize BitMode >>>>sizeType TrCH1: type 1: 72 TrCH2: type 2; part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) >>>>logicalChannelList All TrCH3: N/A TrCH4: N/A TrCH4: N/A TrCH2: One TrCH2: One TrCH2: One TrCH2: 178 >>>>sizeType TrCH1: 1: 40 TrCH2: 178 >>>>sizeType TrCH1: 1: 40 TrCH2: 178 >>>>sizeType TrCH1: 1: 78 TrCH1: (1x13) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A TrCH3: N/A  |   | ND3. 1, ND0. 2,   |
| >>logicalChannelIdentity RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A >>rlc-SizeList RB1- RB3: configured RB5- RB7: N/A >>mac- RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A  >DL- logicalChannelPriority RB3: 3 RB5- RB7: N/A  >DL- logicalChannelMappingList S-Mapping option 1 One mapping option 1 >>>dl- TransportChannelIden tity RB1: 1, RB2: 2, RB7: 3, RB5: 1, RB6: 2, RB7: 3, RB5- RB7: N/A  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList S-Uplink transport channel type >transportChannelIdentity TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9 >transportFormatSet DedicatedTransChT FS >>dynamicTF-information S->>tf0/tf0,1 TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144) >>>>rlcSize BitMode >>>>sizeType TrCH1: type 1: 72 TrCH2: type 2; part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) >>>>logicalChannelList All TrCH3: N/A TrCH4: N/A TrCH4: N/A TrCH2: One TrCH2: One TrCH2: One TrCH2: 178 >>>>sizeType TrCH1: 1: 40 TrCH2: 178 >>>>sizeType TrCH1: 1: 40 TrCH2: 178 >>>>sizeType TrCH1: 1: 78 TrCH1: (1x13) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A TrCH3: N/A  |   | KB7: 3.   |
| RB3: 3   | >>logicalChannelIdentity  | RB1: 1 RB2: 2   |
| RB5- RB7: N/A   SPIc-SizeList   RB1- RB3: configured RB5- RB7: N/A   SPB5- RB7: N/A   SPB5- RB7: N/A   RB1- RB3: configured RB5- RB7: N/A   RB1- RB3: 3   RB5- RB7: 5   SPIC- logicalChannelMappingList   SPIC- RB3: 3   RB5- RB7: 5   SPIC- RB3: 3   RB5- RB7: N/A   RB1- RB3: 9   RB5: 1, RB6: 2, RB7: 3, RB5- RB7: N/A   RB1- RB3: 9   RB5: 1, RB6: 2, RB7: 3, RB5- RB7: N/A   RB1- RB3: 3   RB5- RB7: N/A | //ogloaronarmendernity  |   |
| >>rlc-SizeList   |   |   |
| >>rlc-SizeList   |   | RB5- RB7: N/A   |
| Configured RB5- RB7: N/A   | Cinal int   |   |
| RB5- RB7: N/A  | >>ric-SizeList  |   |
| RB5- RB7: N/A  |   | configured  |
| Section  |   |   |
| LogicalChannelPriority   |   |   |
| LogicalChannelPriority   | >>mac-  | RB1: 1, RB2: 2,   |
| RB5- RB7: 5  | LogicalChannelPriority  |   |
| SDL-  logicalChannelMappingList  | Logicalorialities flority   |   |
| logicalChannelMappingList  |   | RB5- RB7: 5   |
| logicalChannelMappingList  | >DL-  |   |
| >>Mapping option 1 >>>dl- TransportChannelType >>>transportChannelIden tity  RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3, RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A  TrCH INFORMATION PER TrCH  UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity  >transportChannelIdentity  >transportChannelIdentity  >transportFormatSet  >>dynamicTF-information >>>tf0/ tf0,1  TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144) >>>>rlcSize  BitMode  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1 = 6, part2 = 5 TrCH3: type 1: 60 TrCH4: 2: type 2: part1 = 2, part2 = 0 (144)  >>>>logicalChannelList  >>>t1  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  >>>>sizeType  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: all  TrCH1: (1x54) TrCH1: (1x54) TrCH2: (1x13) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A   |   |   |
| >>>dl- TransportChannelType >>>>transportChannelIden tity RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3,  >>>logicalChannelIdentity RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9 DedicatedTransChT FS  >>dynamicTF-information >>>tf0/ tf0,1 TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144) >>>>rlcSize BitMode >>>>sizeType TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>numberOfTbSizeList TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH3: N/A TrCH2: One >>>>numberOfTbSizeList TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList TrCH1: 1: 410 TrCH2: 1: 78  >>>>logicalChannelList TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A   |   |   |
| >>>dl- TransportChannelType >>>>transportChannelIden tity RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3,  >>>logicalChannelIdentity RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9 DedicatedTransChT FS  >>dynamicTF-information >>>tf0/ tf0,1 TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144) >>>>rlcSize BitMode >>>>sizeType TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>numberOfTbSizeList TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH3: N/A TrCH2: One >>>>numberOfTbSizeList TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList TrCH1: 1: 410 TrCH2: 1: 78  >>>>logicalChannelList TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A TrCH2: (1x113) TrCH3: N/A   | >>Mapping option 1  | One mapping option  |
| TransportChannelType         >>>transportChannelIden tity         RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3, RB5: 1, RB6: 2, RB7: 3, RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A           TrCH INFORMATION PER TrCH         RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A           TrCH INFORMATION PER TrCH         Dch           UL- AddReconfTransChInfoList         Dch           >Uplink transport channel type         TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9           >transportFormatSet         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)           >>>>rlcSize         BitMode           >>>>sizeType         TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1-3: Zero TrCH4: Zero, one           >>>>logicalChannelList         All           >>>>numberOfTansportBI ocks         TrCH1: (1x40) TrCH2: (1x 78) TrCH4: N/A TrCH4: N/A           >>>>numberOfTbSizeList         TrCH1: 0ne TrCH2: BitMode           >>>>sizeType         TrCH1: 1: 40 TrCH2: 1: 78           >>>>numberOfTbSizeList         TrCH1: 2: DitMode           >>>>sizeType         TrCH1: 1: 410 TrCH2: (1x113) TrCH3: N/A   |   |   |
| >>>>transportChannelIden tity         RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3, RB7: 3, RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A           TrCH INFORMATION PER TrCH         RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A           TrCH INFORMATION PER TrCH         TrCH INFORMATION PER TrCH           UL- AddReconfTransChInfoList         Dch           >Uplink transport channel type         TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9           >transportFormatSet         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)           >>>>rlcSize         BitMode           >>>>sizeType         TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1-3: Zero TrCH4: Zero, one           >>>slogicalChannelList         All           >>>>numberOfTransportBI ocks         TrCH1: (1x40) TrCH2: (1x 78) TrCH4: N/A           >>>>slogicalChannelList         TrCH1: 0ne TrCH2: BitMode           >>>>slogicalChannelList         TrCH1: 2: BitMode           >>>>slogicalChannelList         TrCH1: 1: 40 TrCH2: 1: 78           >>>>logicalChannelList         TrCH1: 2: One           >>>>logicalChannelList         TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A   |   | DCH   |
| >>>>transportChannelIden tity         RB1- RB3: 9 RB5: 1, RB6: 2, RB7: 3, RB7: 3, RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A           TrCH INFORMATION PER TrCH         RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A           TrCH INFORMATION PER TrCH         TrCH INFORMATION PER TrCH           UL- AddReconfTransChInfoList         Dch           >Uplink transport channel type         TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9           >transportFormatSet         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)           >>>>rlcSize         BitMode           >>>>sizeType         TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1-3: Zero TrCH4: Zero, one           >>>slogicalChannelList         All           >>>>numberOfTransportBI ocks         TrCH1: (1x40) TrCH2: (1x 78) TrCH4: N/A           >>>>slogicalChannelList         TrCH1: 0ne TrCH2: BitMode           >>>>slogicalChannelList         TrCH1: 2: BitMode           >>>>slogicalChannelList         TrCH1: 1: 40 TrCH2: 1: 78           >>>>logicalChannelList         TrCH1: 2: One           >>>>logicalChannelList         TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A   | TransportChannelType  |   |
| tity   |   | DD1 DD2: 0  |
| RB7: 3,   RB1: 1, RB2: 2, RB3: 3   RB5- RB7: N/A   |   |   |
| >>>logicalChannelIdentity         RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A           TrCH INFORMATION PER TrCH         Dch           UL-AddReconfTransChInfoList         Dch           >Uplink transport channel type         Dch           >transportChannelIdentity         TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9           >transportFormatSet         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)           >>>>rlcSize         BitMode           >>>>sizeType         TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type 1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1: 3 Zero TrCH4: Zero, one           >>>>logicalChannelList         All           >>>>numberOfTransportBl ocks         TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A TrCH4: N/A TrCH2: One           >>>>numberOfTbSizeList         TrCH1: 2: BitMode           >>>>sizeType         TrCH1: 1: 40 TrCH2: 1: 78 TrCH1: 1: 40 TrCH2: 1: 78 TrCH1: 2: One           >>>>logicalChannelList         TrCH1: (1x54) TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  | tity  | KB5: 1, KB6: 2,   |
| >>>logicalChannelIdentity         RB1: 1, RB2: 2, RB3: 3 RB5- RB7: N/A           TrCH INFORMATION PER TrCH         Dch           UL-AddReconfTransChInfoList         Dch           >Uplink transport channel type         Dch           >transportChannelIdentity         TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9           >transportFormatSet         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)           >>>>rlcSize         BitMode           >>>>sizeType         TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type 1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1: 3 Zero TrCH4: Zero, one           >>>>logicalChannelList         All           >>>>numberOfTransportBl ocks         TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A TrCH4: N/A TrCH2: One           >>>>numberOfTbSizeList         TrCH1: 2: BitMode           >>>>sizeType         TrCH1: 1: 40 TrCH2: 1: 78 TrCH1: 1: 40 TrCH2: 1: 78 TrCH1: 2: One           >>>>logicalChannelList         TrCH1: (1x54) TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  |   | RB7: 3.   |
| RB3: 3   RB5-RB7: N/A  | la sia al Ola anno III I - 19   |   |
| RB5- RB7: N/A   TrCH INFORMATION PER TrCH   UL-   AddReconfTransChInfoList   >Uplink transport channel type   >transportChannelIdentity   TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9   >transportFormatSet   DedicatedTransChT FS   >>dynamicTF-information   >>>tf0/tf0,1   TrCH1: (0x72)   TrCH2: (0x 181)   TrCH3: (0x60)   TrCH4: (0x144, 1x144)   >>>>rlcSize   BitMode   >>>>sizeType   TrCH1: type 1: 72   TrCH2: type 2: part1= 6, part2= 5   TrCH3: type 1: 60   TrCH4: 2: type 2, part1= 2, part2= 0   (144)   >>>tf1   TrCH3: Zero   TrCH4: Zero, one   All   >>>shf1   TrCH1: (1x40)   TrCH2: (1x 78)   TrCH3: N/A   TrCH4: N/A   TrCH4: N/A   >>>>numberOfTransportBl   ocks   TrCH1: 0ne   TrCH2: One   >>>>sizeType   TrCH1: 2 BitMode   >>>>sizeType   TrCH1: 2 BitMode   >>>>sizeType   TrCH1: 0ne   TrCH2: 0ne   TrCH2: 0ne   TrCH2: 0ne   >>>>logicalChannelList   TrCH1: 1: 40   TrCH2: 1: 78   >>>>numberOfTbSizeList   TrCH1: 2 One   TrCH2: One   TrCH2: One   TrCH2: One   TrCH2: One   TrCH1: all   TrCH2: (1x113)   TrCH3: N/A   TrCH2: (1x113)   TrCH3: N/A   TrCH2: (1x113)   TrCH3: N/A   TrCH3:  | >>>iogicalChannelIdentity   |   |
| RB5- RB7: N/A   TrCH INFORMATION PER TrCH   UL-   AddReconfTransChInfoList   >Uplink transport channel type   >transportChannelIdentity   TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9   >transportFormatSet   DedicatedTransChT FS   >>dynamicTF-information   >>>tf0/tf0,1   TrCH1: (0x72)   TrCH2: (0x 181)   TrCH3: (0x60)   TrCH4: (0x144, 1x144)   >>>>rlcSize   BitMode   >>>>sizeType   TrCH1: type 1: 72   TrCH2: type 2: part1= 6, part2= 5   TrCH3: type 1: 60   TrCH4: 2: type 2, part1= 2, part2= 0   (144)   >>>tf1   TrCH3: Zero   TrCH4: Zero, one   All   >>>shf1   TrCH1: (1x40)   TrCH2: (1x 78)   TrCH3: N/A   TrCH4: N/A   TrCH4: N/A   >>>>numberOfTransportBl   ocks   TrCH1: 0ne   TrCH2: One   >>>>sizeType   TrCH1: 2 BitMode   >>>>sizeType   TrCH1: 2 BitMode   >>>>sizeType   TrCH1: 0ne   TrCH2: 0ne   TrCH2: 0ne   TrCH2: 0ne   >>>>logicalChannelList   TrCH1: 1: 40   TrCH2: 1: 78   >>>>numberOfTbSizeList   TrCH1: 2 One   TrCH2: One   TrCH2: One   TrCH2: One   TrCH2: One   TrCH1: all   TrCH2: (1x113)   TrCH3: N/A   TrCH2: (1x113)   TrCH3: N/A   TrCH2: (1x113)   TrCH3: N/A   TrCH3:  |   | RB3: 3  |
| TrCH INFORMATION PER TrCH  UL- AddReconfTransChInfoList  >Uplink transport channel type  >transportChannelIdentity  >transportFormatSet  >>dynamicTF-information  >>>tf0/ tf0,1  TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)  >>>>rlcSize  BitMode  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>tf 1  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  TrCH4: N/A  >>>>numberOfTransportBI ocks  >>>>logicalChannelList  >>>>sizeType  TrCH1: 11 40 TrCH2: 0ne TrCH2: 0ne TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 2: One TrCH2: (1x113) TrCH2: (1x113) TrCH3: N/A  |   |   |
| TrCH  UL- AddReconfTransChInfoList  >Uplink transport channel type  >transportChannelIdentity  >transportFormatSet  >dynamicTF-information  >>>tf0/ tf0,1  TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)  >>>>rlcSize  BitMode  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>numberOfTbSizeList  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBl ocks  >>>>sizeType  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 0ne TrCH2: 0ne  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A   |   | NDO- ND1. IV/A  |
| TrCH  UL- AddReconfTransChInfoList  >Uplink transport channel type  >transportChannelIdentity  >transportFormatSet  >dynamicTF-information  >>>tf0/ tf0,1  TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)  >>>>rlcSize  BitMode  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>numberOfTbSizeList  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBl ocks  >>>>sizeType  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 0ne TrCH2: 0ne  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A   | TrCH INFORMATION PER  |   |
| UL- AddReconfTransChInfoList  >Uplink transport channel type  >transportChannelIdentity  >transportFormatSet  >dynamicTF-information  >>tf0/ tf0,1  TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)  >>>rlcSize  SitMode  >>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type 1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>numberOfTbSizeList  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A  TrCH4: N/A  >>>>numberOfTransportBI ocks  >>>sizeType  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  TrCH1: (1x54) TrCH2: (1x113)   |   |   |
| AddReconfTransChInfoList   |   |   |
| >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >transportFormatSet  >dynamicTF-information >>>tf0/ tf0,1  TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)  >>>>rlcSize  BitMode  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>logicalChannelList  >>>tf 1  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTbSizeList  TrCH1: One TrCH2: One  >>>>logicalChannelList  >>>>tf 2  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 2: One  TrCH1: (1x54) TrCH1: (1x54) TrCH1: (1x54) TrCH1: (1x54) TrCH2: (1x113) TrCH2: (1x113) TrCH3: N/A   | =   |   |
| >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >transportFormatSet  >dynamicTF-information >>>tf0/ tf0,1  TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)  >>>>rlcSize  BitMode  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>logicalChannelList  >>>tf 1  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTbSizeList  TrCH1: One TrCH2: One  >>>>logicalChannelList  >>>>tf 2  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 2: One  TrCH1: (1x54) TrCH1: (1x54) TrCH1: (1x54) TrCH1: (1x54) TrCH2: (1x113) TrCH2: (1x113) TrCH3: N/A   | AddReconfTransChInfol ist   |   |
| type         Image: stransport content of the processing of the proces                               |   | 5 .   |
| >transportChannelIdentity         TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9           >transportFormatSet         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)           >>>>rlcSize         BitMode           >>>>sizeType         TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1-3: Zero TrCH4: Zero, one           >>>>logicalChannelList         All           >>>>tf 1         TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A           >>>>numberOfTransportBl ocks         TrCH1: One TrCH2: One           >>>>sizeType         TrCH1: 1: 40 TrCH2: 1: 78           >>>>numberOfTbSizeList         TrCH1: 2: BitMode           >>>>sizeType         TrCH1: 1: 40 TrCH2: 1: 78           >>>numberOfTbSizeList         TrCH1: 2: One           >>>>logicalChannelList         TrCH1: (1x54) TrCH2: (1x113) TrCH2: (1x113) TrCH2: (1x113) TrCH3: N/A   | >Uplink transport channel   | Dch   |
| >transportChannelIdentity         TrCH1: 1, TrCH2: 2, TrCH3: 3, TrCH4: 9           >transportFormatSet         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)           >>>>rlcSize         BitMode           >>>>sizeType         TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1-3: Zero TrCH4: Zero, one           >>>>logicalChannelList         All           >>>>tf 1         TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A           >>>>numberOfTransportBl ocks         TrCH1: One TrCH2: One           >>>>sizeType         TrCH1: 1: 40 TrCH2: 1: 78           >>>>numberOfTbSizeList         TrCH1: 2: BitMode           >>>>sizeType         TrCH1: 1: 40 TrCH2: 1: 78           >>>numberOfTbSizeList         TrCH1: 2: One           >>>>logicalChannelList         TrCH1: (1x54) TrCH2: (1x113) TrCH2: (1x113) TrCH2: (1x113) TrCH3: N/A   | type  |   |
| TrCH3: 3, TrCH4: 9   |   | T-OLIA: 4 T-OLIO: 0   |
| >transportFormatSet         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)           >>>rlcSize         BitMode           >>>>sizeType         TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1-3: Zero TrCH4: Zero, one           >>>slogicalChannelList         All           >>>>tf 1         TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A           >>>>numberOfTransportBl ocks         TrCH1: One TrCH2: One           >>>>rlc-Size         TrCH1: 1: 40 TrCH2: 1: 78           >>>>numberOfTbSizeList         TrCH1: 1: 40 TrCH2: 1: 78           >>>>numberOfTbSizeList         TrCH1: 2: One           >>>>logicalChannelList         TrCH1: all           >>>tf 2         TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  | >transportCnannelidentity   |   |
| >transportFormatSet         DedicatedTransChT FS           >>dynamicTF-information         TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)           >>>rlcSize         BitMode           >>>>sizeType         TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)           >>>>numberOfTbSizeList         TrCH1-3: Zero TrCH4: Zero, one           >>>slogicalChannelList         All           >>>>tf 1         TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A           >>>>numberOfTransportBl ocks         TrCH1: One TrCH2: One           >>>>rlc-Size         TrCH1: 1: 40 TrCH2: 1: 78           >>>>numberOfTbSizeList         TrCH1: 1: 40 TrCH2: 1: 78           >>>>numberOfTbSizeList         TrCH1: 2: One           >>>>logicalChannelList         TrCH1: all           >>>tf 2         TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  |   | TrCH3: 3. TrCH4: 9  |
| >>dynamicTF-information >>>tf0/tf0,1  TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)  >>>>rlcSize  BitMode  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>numberOfTbSizeList  TrCH1: 1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBl ocks  TrCH1: 0ne TrCH2: One  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 1: 41  TrCH1: 1: 41  TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  | , transportFormatCat  |   |
| >>dynamicTF-information >>>tf0/tf0,1 TrCH1: (0x72) TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144) >>>>rlcSize BitMode >>>>sizeType TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) >>>>numberOfTbSizeList TrCH1: 1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A >>>>numberOfTransportBl ocks TrCH1: 0ne TrCH2: One >>>>rlcSize TrCH1: 1: 40 TrCH2: 1: 78 >>>>numberOfTbSizeList TrCH1: 1: 40 TrCH2: 1: 78 >>>>numberOfTbSizeList TrCH1: 1: 40 TrCH2: 1: 78 >>>>numberOfTbSizeList TrCH1: 1: 40 TrCH2: 1: 78 TrCH1: 1: 41 TrCH1: 1: 41 TrCH1: 1: 41 TrCH1: 1: 41 TrCH2: (1x113) TrCH3: N/A   | >transportFormatSet   |   |
| >>>tf0/tf0,1   |   | FS  |
| >>>tf0/tf0,1   | >>dvnamicTF-information   |   |
| TrCH2: (0x 181) TrCH3: (0x60) TrCH4: (0x144, 1x144)  >>>>rlcSize  BitMode  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>numberOfTbSizeList  TrCH1: 1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBI ocks  TrCH1: 0ne TrCH2: One >>>>sizeType  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78   |   | T 0114 (0.70)   |
| TrCH3: (0x60) TrCH4: (0x144, 1x144)  >>>>rlcSize  BitMode  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>numberOfTbSizeList  TrCH1-3: Zero TrCH4: Zero, one  >>>logicalChannelList  >>>tf 1  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBI ocks  TrCH1: One TrCH2: One  >>>>sizeType  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  TrCH1: all  >>>trCH1: all  TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  | >>>tf0/ tf0,1   | TrCH1: (0x/2)   |
| TrCH3: (0x60) TrCH4: (0x144, 1x144)  >>>>rlcSize  BitMode  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>numberOfTbSizeList  TrCH1-3: Zero TrCH4: Zero, one  >>>logicalChannelList  >>>tf 1  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBI ocks  TrCH1: One TrCH2: One  >>>>sizeType  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  TrCH1: all  >>>trCH1: all  TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  |   | TrCH2: (0x 181)   |
| TrCH4: (0x144, 1x144)  >>>>rlcSize  BitMode  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>numberOfTbSizeList  TrCH4: Zero, one  >>>slogicalChannelList  >>>tf 1  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBl ocks  TrCH1: 0ne TrCH2: One  >>>>sizeType  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A   |   |   |
| 1x144)   |   |   |
| 1x144)   |   | TrCH4: (0x144,  |
| >>>>rlcSize  >>>>sizeType  TrCH1: type 1: 72 TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>numberOfTbSizeList  TrCH1-3: Zero TrCH4: Zero, one  >>>logicalChannelList  >>>tf 1  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBI ocks  TrCH1: 0ne TrCH2: One  >>>>sizeType  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: 1: 40 TrCH2: 1: 78  >>>>logicalChannelList  TrCH1: 1: 40 TrCH2: 1: 78   |   | 1v144)  |
| >>>>sizeType   |   |   |
| TrCH2: type 2:   | >>>rlcSize  |   |
| TrCH2: type 2:   | >>>>sizeTvne  | TrCH1: type 1: 72   |
| part1= 6, part2= 5<br>  TrCH3: type1: 60<br>  TrCH4: 2: type 2, part1= 2, part2= 0<br>  (144)<br>  >>>>numberOfTbSizeList  |   |   |
| TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>numberOfTbSizeList TrCH1-3: Zero TrCH4: Zero, one  >>>logicalChannelList All  >>>tf 1 TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBl ocks TrCH1: One TrCH2: One >>>>rlc-Size TrCH1-2: BitMode  >>>>sizeType TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList TrCH1: One TrCH2: One  TrCH2: 1: 78  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: (1x54) TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  | 7777 0120 1 ypo   | TrCHO ture o  |
| TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>numberOfTbSizeList TrCH1-3: Zero TrCH4: Zero, one  >>>logicalChannelList All  >>>tf 1 TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBl ocks TrCH1: One TrCH2: One >>>>rlc-Size TrCH1-2: BitMode  >>>>sizeType TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList TrCH1: One TrCH2: One  TrCH2: 1: 78  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: 1: 40 TrCH2: 1: 78  TrCH1: (1x54) TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  | 777701201990  | TrCH2: type 2:  |
| TrCH4: 2: type 2, part1= 2, part2= 0 (144)  >>>>numberOfTbSizeList TrCH1-3: Zero TrCH4: Zero, one  >>>logicalChannelList All  >>>tf 1 TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBl ocks TrCH1: One TrCH2: One  >>>>lcSize TrCH1-2: BitMode  >>>>sizeType TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList TrCH1-2: One  >>>>logicalChannelList TrCH1: all  >>>tf 2 TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A   | 7777 G.EG 1   | TrCH2: type 2:  |
| part1= 2, part2= 0 (144)   | 7777701201360   | TrCH2: type 2:<br>part1= 6, part2= 5  |
| (144)  | 7777701201360   | TrCH2: type 2:<br>part1= 6, part2= 5<br>TrCH3: type1: 60  |
| (144)  | **************************************  | TrCH2: type 2:<br>part1= 6, part2= 5<br>TrCH3: type1: 60<br>TrCH4: 2: type 2,   |
| >>>numberOfTbSizeList  | , , , , , , , , , , , , , , , , , , ,   | TrCH2: type 2:<br>part1= 6, part2= 5<br>TrCH3: type1: 60<br>TrCH4: 2: type 2,   |
| TrCH4: Zero, one   | , , , , , , , , , , , , , , , , , , ,   | TrCH2: type 2:<br>part1= 6, part2= 5<br>TrCH3: type1: 60<br>TrCH4: 2: type 2,<br>part1= 2, part2= 0   |
| TrCH4: Zero, one   |   | TrCH2: type 2:<br>part1= 6, part2= 5<br>TrCH3: type1: 60<br>TrCH4: 2: type 2,<br>part1= 2, part2= 0<br>(144)  |
| >>>>logicalChannelList All  >>>tf 1 TrCH1: (1x40)  |   | TrCH2: type 2:<br>part1= 6, part2= 5<br>TrCH3: type1: 60<br>TrCH4: 2: type 2,<br>part1= 2, part2= 0<br>(144)  |
| >>>tf 1  |   | TrCH2: type 2:<br>part1= 6, part2= 5<br>TrCH3: type1: 60<br>TrCH4: 2: type 2,<br>part1= 2, part2= 0<br>(144)<br>TrCH1-3: Zero   |
| >>>tf 1  | >>>>numberOfTbSizeList  | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) TrCH1-3: Zero TrCH4: Zero, one  |
| TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBl ocks  >>>>rlc-Size  TrCH1: 2: BitMode  TrCH2: One  TrCH2: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList TrCH1: all  >>>tf 2  TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  | >>>>numberOfTbSizeList  | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) TrCH1-3: Zero TrCH4: Zero, one  |
| TrCH3: N/A TrCH4: N/A  >>>>numberOfTransportBl ocks  >>>>rlc-Size  TrCH1: One TrCH2: One  >>>>sizeType  TrCH1: 1: 40 TrCH2: 1: 78  >>>>numberOfTbSizeList  TrCH1: all  >>>tf 2  TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  | >>>>numberOfTbSizeList >>>>logicalChannelList   | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) TrCH1-3: Zero TrCH4: Zero, one All  |
| TrCH4: N/A   | >>>>numberOfTbSizeList >>>>logicalChannelList   | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) TrCH1-3: Zero TrCH4: Zero, one All TrCH1: (1x40)  |
| TrCH4: N/A   | >>>>numberOfTbSizeList >>>>logicalChannelList   | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) TrCH1-3: Zero TrCH4: Zero, one All TrCH1: (1x40) TrCH2: (1x 78)   |
| >>>>numberOfTransportBl  | >>>>numberOfTbSizeList >>>>logicalChannelList   | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) TrCH1-3: Zero TrCH4: Zero, one All TrCH1: (1x40) TrCH2: (1x 78)   |
| ocks         TrCH2: One           >>>>rlc-Size         TrCH1-2: BitMode           >>>>sizeType         TrCH1: 1: 40           TrCH2: 1: 78         TrCH2: 1: 78           >>>numberOfTbSizeList         TrCH1-2: One           >>>logicalChannelList         TrCH1: all           >>>tf 2         TrCH1: (1x54)           TrCH2: (1x113)         TrCH3: N/A  | >>>>numberOfTbSizeList >>>>logicalChannelList   | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) TrCH1-3: Zero TrCH4: Zero, one All TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A  |
| ocks         TrCH2: One           >>>>rlc-Size         TrCH1-2: BitMode           >>>>sizeType         TrCH1: 1: 40           TrCH2: 1: 78         TrCH2: 1: 78           >>>numberOfTbSizeList         TrCH1-2: One           >>>logicalChannelList         TrCH1: all           >>>tf 2         TrCH1: (1x54)           TrCH2: (1x113)         TrCH3: N/A  | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) TrCH1-3: Zero TrCH4: Zero, one All TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A   |
| >>>>rlc-Size   | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) TrCH1-3: Zero TrCH4: Zero, one All TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A   |
| >>>>sizeType   | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBl  | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) TrCH1-3: Zero TrCH4: Zero, one All TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A TrCH1: One  |
| >>>>sizeType   | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBlocks  | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  TrCH1: One TrCH2: One  |
| TrCH2: 1: 78  >>>numberOfTbSizeList TrCH1-2: One  >>>logicalChannelList TrCH1: all  >>>tf 2 TrCH2: (1x54)  TrCH2: (1x113)  TrCH3: N/A  | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBlocks  | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  TrCH1: One TrCH2: One  |
| >>>numberOfTbSizeList TrCH1-2: One >>>logicalChannelList TrCH1: all >>>tf 2 TrCH1: (1x54) TrCH2: (1x113) TrCH3: N/A  | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBl ocks >>>>rlc-Size  | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  TrCH1: One TrCH2: One TrCH1-2: BitMode   |
| >>>logicalChannelList  | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBl ocks >>>>rlc-Size  | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  TrCH1: One TrCH2: One TrCH1-2: BitMode TrCH1: 1: 40  |
| >>>logicalChannelList  | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBl ocks >>>>rlc-Size  | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A  TrCH1: One TrCH2: One TrCH1-2: BitMode TrCH1: 1: 40  |
| >>>tf 2  | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>>numberOfTransportBl ocks >>>>rlc-Size >>>>sizeType  | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A TrCH1: One TrCH2: One TrCH1: BitMode TrCH1: 1: 40 TrCH2: 1: 78  |
| >>>tf 2  | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBl ocks >>>rlc-Size >>>>sizeType >>>>numberOfTbSizeList                         | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A TrCH1: One TrCH2: One TrCH1-2: BitMode TrCH1: 1: 40 TrCH2: 1: 78 TrCH1-2: One   |
| TrCH2: (1x113)<br>TrCH3: N/A   | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBl ocks >>>rlc-Size >>>>sizeType >>>>numberOfTbSizeList                         | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A TrCH1: One TrCH2: One TrCH1-2: BitMode TrCH1: 1: 40 TrCH2: 1: 78 TrCH1-2: One   |
| TrCH3: N/A   | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBl ocks >>>>rlc-Size >>>>sizeType  >>>numberOfTbSizeList >>>>logicalChannelList | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A TrCH1: One TrCH2: One TrCH1-2: BitMode TrCH1: 1: 40 TrCH2: 1: 78 TrCH1-2: One TrCH1-2: One TrCH1-1: One   |
|  | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBl ocks >>>>rlc-Size >>>>sizeType  >>>numberOfTbSizeList >>>>logicalChannelList | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A TrCH1: One TrCH2: One TrCH1-2: BitMode TrCH1: 1: 40 TrCH2: 1: 78 TrCH1-2: One TrCH1-2: One TrCH1-3: One TrCH1-1: 140 TrCH2: 1: 78   |
|  | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBl ocks >>>>rlc-Size >>>>sizeType  >>>numberOfTbSizeList >>>>logicalChannelList | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A TrCH1: One TrCH2: One TrCH1-2: BitMode TrCH1: 1: 40 TrCH2: 1: 78 TrCH1-2: One TrCH1-2: One TrCH1-3: TrCH1: TrCH2: TrCH1: TrCH2: TrCH2: TrCH1: TrCH2: |
| (,\pi4 N/A   | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBl ocks >>>>rlc-Size >>>>sizeType  >>>numberOfTbSizeList >>>>logicalChannelList | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144)  TrCH1-3: Zero TrCH4: Zero, one All  TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A TrCH1: One TrCH2: One TrCH1-2: BitMode TrCH1: 1: 40 TrCH2: 1: 78 TrCH1-2: One TrCH1-2: One TrCH1-3: TrCH1: TrCH2: TrCH1: TrCH2: TrCH2: TrCH1: TrCH2: |
| 170111.14/1  | >>>numberOfTbSizeList >>>>logicalChannelList >>>tf 1  >>>numberOfTransportBl ocks >>>>rlc-Size >>>>sizeType  >>>numberOfTbSizeList >>>>logicalChannelList | TrCH2: type 2: part1= 6, part2= 5 TrCH3: type1: 60 TrCH4: 2: type 2, part1= 2, part2= 0 (144) TrCH1-3: Zero TrCH4: Zero, one All TrCH1: (1x40) TrCH2: (1x 78) TrCH3: N/A TrCH4: N/A TrCH1: One TrCH1: One TrCH1-2: BitMode TrCH1: 1: 40 TrCH2: 1: 78 TrCH1-2: One TrCH1-3: One TrCH1: 1: 40 TrCH2: 1: 78 TrCH1-3: One TrCH1-3: One TrCH1-3: One TrCH1: 1: 40 TrCH2: 1: 78 TrCH1-3: One  |

| >>>>numberOfTransportBl  | TrCH1: One   |
|--|--|
| ocks   | TrCh2: One   |
|  |  |
| >>>rlc-Size  | TrCH1: BitMode   |
| >>>>sizeType   | TrCH1: type 1: 54  |
|  | TrCH2: type 1: 113   |
| >>>>numberOfTbSizeList   | TrCH1: One   |
|  | TrCH2: One   |
| >>>>logicalChannelList   | TrCH1: all   |
|  | TrCH2: all   |
| >>>tf 3  | TrCH1: (1x64)  |
|  | TrCH2: (1x181)   |
|  | TrCH3: N/A   |
|  | TrCH4: N/A   |
| >>>>numberOfTransportBl  | TrCH1: One   |
| ocks   | TrCh2: One   |
| >>>>rlc-Size   | TrCH1: BitMode   |
| >>>>sizeType   | TrCH1: type 1: 64  |
|  | TrCH2: type 2:   |
|  | part1=6, part2= 5  |
| >>>>numberOfTbSizeList   | TrCH1: One   |
|  | TrCH2: One   |
| >>>>logicalChannelList   | TrCH1: all   |
| logical orial incibis  | TrCH2: all   |
| >>>tf 4  | TrCH1: (1x72)  |
| ///u 4   | TrCH1: (1X72)  |
|  | TrCH3: N/A   |
|  | TrCH4: N/A   |
|  |  |
| >>>>numberOfTransportBl ocks   | TrCH1: One   |
| >>>rlc-Size  | TrCH1: BitMode   |
| >>>>sizeType   | TrCH1: type 1: 72  |
| >>>>numberOfTbSizeList   | TrCH1: One   |
| >>>logicalChannelList  | TrCH1: all   |
|  |  |
| >>semistaticTF-Information   |  |
| >>semistaticTF-Information   | TrCH1- TrCH3: 20   |
| >>semistaticTF-Information >>>tti  | TrCH1- TrCH3: 20<br>TrCH4: 40  |
| >>>tti   | TrCH4: 40  |
| >>>tti >>>channelCodingType  | TrCH4: 40<br>Convolutional   |
| >>>tti   | TrCH4: 40<br>Convolutional<br>TrCH1- TrCH3:  |
| >>>tti >>>channelCodingType  | TrCH4: 40 Convolutional TrCH1- TrCH3: Third  |
| >>>tti >>>channelCodingType >>>>codingRate   | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third   |
| >>>tti >>>channelCodingType  | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200  |
| >>>tti >>>channelCodingType >>>>codingRate   | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200 TrCH2: 190   |
| >>>tti >>>channelCodingType >>>>codingRate   | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200 TrCH2: 190 TrCH3: 256  |
| >>>tti >>>channelCodingType >>>codingRate >>>rateMatchingAttribute   | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200 TrCH2: 190 TrCH3: 256 TrCH4: 170   |
| >>>tti >>>channelCodingType >>>>codingRate   | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12   |
| >>>tti >>>channelCodingType >>>codingRate >>>rateMatchingAttribute   | TrCH4: 40  Convolutional  TrCH1- TrCH3: Third  TrCH4: Third  TrCH1: 200  TrCH2: 190  TrCH3: 256  TrCH4: 170  TrCH1: 12  TrCH2: 0   |
| >>>tti >>>channelCodingType >>>codingRate >>>rateMatchingAttribute   | TrCH4: 40  Convolutional  TrCH1- TrCH3: Third  TrCH4: Third  TrCH1: 200  TrCH2: 190  TrCH3: 256  TrCH4: 170  TrCH1: 12  TrCH2: 0  TrCH3: 0   |
| >>>tti >>>channelCodingType >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size   | TrCH4: 40  Convolutional  TrCH1- TrCH3: Third  TrCH4: Third  TrCH1: 200  TrCH2: 190  TrCH3: 256  TrCH4: 170  TrCH1: 12  TrCH2: 0   |
| >>>tti >>>channelCodingType >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size   | TrCH4: 40  Convolutional  TrCH1- TrCH3: Third  TrCH4: Third  TrCH1: 200  TrCH2: 190  TrCH3: 256  TrCH4: 170  TrCH1: 12  TrCH2: 0  TrCH3: 0   |
| >>>tti >>>channelCodingType >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList   | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16   |
| >>>tti >>>channelCodingType >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport   | TrCH4: 40  Convolutional  TrCH1- TrCH3: Third  TrCH4: Third  TrCH1: 200  TrCH2: 190  TrCH3: 256  TrCH4: 170  TrCH1: 12  TrCH2: 0  TrCH3: 0   |
| >>>tti  >>>channelCodingType  >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type  | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16   |
| >>>tti  >>>channelCodingType  >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl-   | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16   |
| >>>tti  >>>channelCodingType  >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl- TransportChannelIdentity  | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH2: 190 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16   |
| >>>tti  >>>channelCodingType  >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl-   | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH2: 190 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16   |
| >>>tti  >>>channelCodingType  >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl- TransportChannelIdentity  | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH2: 190 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16  Dch  Independent <only on="" td="" tf0="" trch1<=""></only>  |
| >>>tti  >>>channelCodingType  >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl- TransportChannelIdentity  | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16  Dch  Independent <only and<="" different="" is="" on="" td="" tf0="" trch1=""></only>  |
| >>>tti  >>>channelCodingType >>>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl- TransportChannelIdentity >tfs-SignallingMode  | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH2: 190 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16  Dch  Independent <only on="" td="" tf0="" trch1<=""></only>  |
| >>>tti  >>>channelCodingType >>>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl- TransportChannelIdentity >tfs-SignallingMode  >>transportFormatSet  | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16  Dch  Independent <only and<="" different="" is="" on="" td="" tf0="" trch1=""></only>  |
| >>>tti  >>>channelCodingType >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl- TransportChannelIdentity >tfs-SignallingMode  >>transportFormatSet >>>dynamicTF-information                                      | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16  Dch  Independent <only and<="" different="" is="" on="" td="" tf0="" trch1=""></only>  |
| >>>tti  >>>channelCodingType >>>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl- TransportChannelIdentity >tfs-SignallingMode  >>transportFormatSet  | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH2: 190 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16  Dch  Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""></only>                             |
| >>>tti  >>>channelCodingType >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl- TransportChannelIdentity >tfs-SignallingMode  >>transportFormatSet >>>dynamicTF-information                                      | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH1: 200 TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16  Dch  Independent <only and<="" different="" is="" on="" td="" tf0="" trch1=""></only>  |
| >>>tti  >>>channelCodingType >>>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl- TransportChannelIdentity >tfs-SignallingMode  >>transportFormatSet >>>dynamicTF-information >>>tf0/ tf0,1 >>>rlcSize            | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16  Dch  Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1="">  TrCH1: (1x0) BitMode</only>                  |
| >>>tti  >>>channelCodingType >>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl- TransportChannelIdentity >tfs-SignallingMode  >>transportFormatSet >>>dynamicTF-information >>>tf0/ tf0,1 >>>rlcSize >>>sizeType | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16  Dch  Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1="">  TrCH1: (1x0) BitMode TrCH1: type 1: 0</only> |
| >>>tti  >>>channelCodingType >>>>codingRate  >>>rateMatchingAttribute  >>>crc-Size  DL- AddReconfTransChInfoList >Downlink transport channel type >dl- TransportChannelIdentity >tfs-SignallingMode  >>transportFormatSet >>>dynamicTF-information >>>tf0/ tf0,1 >>>rlcSize            | TrCH4: 40 Convolutional TrCH1- TrCH3: Third TrCH4: Third TrCH2: 190 TrCH3: 256 TrCH4: 170 TrCH1: 12 TrCH2: 0 TrCH3: 0 TrCH4: 16  Dch  Independent <only and="" below="" different="" is="" on="" shown="" tf0="" trch1="">  TrCH1: (1x0) BitMode</only>                  |

| >>>semistaticTF-   | same as UL   |
|--|--|
| Information  |  |
| >>ULTrCH-Id  | TrCH1: 1, TrCH2: 2,  |
|  | TrCH3: 3, TrCH4: 9,  |
| >dch-QualityTarget   | ,                    |
|  | 2  |
| >>bler-QualityValue  | TrCH1: 7x10 <sup>-3</sup>                                  |
|  | TrCH2: Absent  |
|  | TrCH3: Absent  |
|  |  |
|  | TrCH4: Absent  |
| TrCH INFORMATION,  |  |
| COMMON   |  |
| ul-CommonTransChInfo   |  |
| >tfcs-ID (TDD only)  | 1  |
|  | TALOE  |
| >sharedChannelIndicator  | FALSE  |
| (TDD only)   |  |
| > tfc-Subset   | Absent, not required                                       |
| >ul-TFCS   | Normal TFCI  |
| 241 11 00  |  |
|  | signalling   |
| >>explicitTFCS-  | Complete   |
| ConfigurationMode  | <u> </u>   |
| >>>ctfcSize  | Ctfc6Bit   |
| >>>TFCS representation   | Addition   |
|  | Addition   |
| >>>>TFC list   |  |
| >>>>TFC 1  | (TF0, TF0, TF0,  |
|  | TF0)   |
| >>>>>ctfc  | 0  |
|  | -  |
| >>>>>gainFactorInform  | Computed   |
| ation  |  |
| >>>>>>referenceTFCId   | 0  |
| >>>>TFC 2  | (TF1, TF0, TF0,  |
| //////////////////////////////////////   |  |
|  | TF0)   |
| >>>>>ctfc  | 1  |
| >>>>>gainFactorInform  | Computed   |
| ation  |  |
|  | N/A  |
| >>>>>βc (FDD only)   |  |
| >>>>>βd  | N/A  |
| >>>>>>referenceTFCld   | 0  |
| >>>>TFC 3  | (TF2, TF1, TF0,  |
| >>>>>1FC 3   |  |
|  | TF0)   |
| >>>>>ctfc  | 7  |
| >>>>>gainFactorInform  | Computed   |
| ation  |  |
|  | 0  |
| >>>>>referenceTFCld  | /TEO TEO TEO   |
| >>>>TFC 4  | (TF3, TF2, TF0,  |
|  | TF0)   |
| >>>>>ctfc  | 13   |
| >>>>>gainFactorInform  | Computed   |
| ation  | Joinpalou  |
|  | <del> </del>   |
|  |  |
| >>>>>βc (FDD only)   |  |
| >>>>>βc (FDD only)   |  |
| >>>>>βd  |  |
| >>>>>βd<br>>>>>>referenceTFCId   | 0  |
| >>>>>βd  | 0<br>(TF4, TF3, TF0,                                       |
| >>>>>βd<br>>>>>>referenceTFCId   |  |
| >>>>>>βd<br>>>>>>referenceTFCld<br>>>>>>TFC 5  | (TF4, TF3, TF0,<br>TF0)                                    |
| >>>>>βd >>>>>referenceTFCId >>>>>TFC 5  >>>>>ctfc  | (TF4, TF3, TF0,<br>TF0)<br>19                              |
| >>>>>>βd >>>>>referenceTFCld >>>>>TFC 5  >>>>>ctfc >>>>>gainFactorInform   | (TF4, TF3, TF0,<br>TF0)                                    |
| >>>>>>βd >>>>>referenceTFCld >>>>>TFC 5  >>>>>ctfc >>>>>gainFactorInform ation   | (TF4, TF3, TF0,<br>TF0)<br>19                              |
| >>>>>>βd >>>>>referenceTFCld >>>>>TFC 5  >>>>>ctfc >>>>>gainFactorInform ation >>>>>referenceTFCld                           | (TF4, TF3, TF0, TF0) 19 Computed 0                         |
| >>>>>>βd >>>>>referenceTFCld >>>>>TFC 5  >>>>>ctfc >>>>>gainFactorInform ation   | (TF4, TF3, TF0, TF0) 19 Computed 0                         |
| >>>>>>βd >>>>>referenceTFCld >>>>>TFC 5  >>>>>ctfc >>>>>gainFactorInform ation >>>>>referenceTFCld                           | (TF4, TF3, TF0, TF0) 19 Computed 0 (TF0, TF0, TF0,         |
| >>>>>>\sigma d >>>>>>Fd >>>>>FerenceTFCId >>>>>TFC 5  >>>>>ctfc >>>>>>gainFactorInform ation >>>>>TFC 6                      | (TF4, TF3, TF0, TF0) 19 Computed 0 (TF0, TF0, TF0, TF1)    |
| >>>>>>βd >>>>>referenceTFCld >>>>>TFC 5  >>>>>ctfc >>>>>gainFactorInform ation >>>>>TFC 6  >>>>>>tfC 6                       | (TF4, TF3, TF0, TF0) 19 Computed 0 (TF0, TF0, TF0, TF1) 20 |
| >>>>>>\sigma d >>>>>>Fd >>>>>FerenceTFCId >>>>>TFC 5  >>>>>ctfc >>>>>>gainFactorInform ation >>>>>TFC 6                      | (TF4, TF3, TF0, TF0) 19 Computed 0 (TF0, TF0, TF0, TF1)    |
| >>>>>>βd >>>>>referenceTFCld >>>>>TFC 5  >>>>>ctfc >>>>>gainFactorInform ation >>>>>TFC 6  >>>>>>tfC 6                       | (TF4, TF3, TF0, TF0) 19 Computed 0 (TF0, TF0, TF0, TF1) 20 |
| >>>>>>βd >>>>>TFC 5  >>>>>ctfc >>>>>referenceTFCld >>>>>ctfc >>>>>>referenceTFCld >>>>>ctfc >>>>>>tfc 6  >>>>>>tfC 6         | (TF4, TF3, TF0, TF0) 19 Computed 0 (TF0, TF0, TF0, TF1) 20 |
| >>>>>>βd >>>>>referenceTFCld >>>>>TFC 5  >>>>>ctfc >>>>>gainFactorInform ation >>>>>TFC 6  >>>>>ctfc >>>>>>FC 6  >>>>>>TFC 6 | (TF4, TF3, TF0, TF0) 19 Computed 0 (TF0, TF0, TF0, TF1) 20 |
| >>>>>>βd >>>>>TFC 5  >>>>>ctfc >>>>>referenceTFCld >>>>>ctfc >>>>>>referenceTFCld >>>>>ctfc >>>>>>tfc 6  >>>>>>tfC 6         | (TF4, TF3, TF0, TF0) 19 Computed 0 (TF0, TF0, TF0, TF1) 20 |

| >>>>>referenceTFCId     | 0  |
|-------------------------|--|
| >>>>TFC 7               | (TF1, TF0, TF0,                                  |
| 777771101               | TF1)   |
| >>>>>ctfc               | 21   |
| >>>>>gainFactorInform   | Computed   |
| ation                   | Computou   |
| >>>>>referenceTFCld     | 0  |
| >>>>TFC 8               | (TF2, TF1, TF0,                                  |
| 777771100               | TF1)   |
| >>>>>ctfc               | 27   |
| >>>>>gainFactorInform   | computed   |
| ation                   | Computed   |
| >>>>>βc (FDD only)      |  |
|                         |  |
| >>>>>βd                 |  |
| >>>>>referenceTFCld     | 0  |
| >>>>TFC 9               | (TF3, TF2, TF0,                                  |
|                         | TF1)   |
| >>>>>ctfc               | 33   |
| >>>>>gainFactorInform   | computed   |
| ation                   |  |
| >>>>>>referenceTFCId    | 0  |
| >>>>TFC 10              | (TF4, TF3, TF0,                                  |
|                         | TF1)   |
| >>>>>ctfc               | 39   |
| >>>>>gainFactorInform   | signalled  |
| ation                   |  |
| >>>>>>βc (FDD only)     | 11   |
| >>>>>βd                 | 15   |
| >>>>>referenceTFCld     | 0  |
| > TFC subset list       |  |
| >>TFC subset 1          | (speech rate 6.6)                                |
| >>> Allowed transport   | (TFC1, TFC2,                                     |
| format combination list | TFC3, TFC6, TFC7,                                |
| Torride combination not | TFC8)  |
| >>TFC subset 2          | (speech rate 8.85)                               |
| >>> Allowed transport   | (TFC1, TFC2,                                     |
| format combination list | TFC3, TFC4, TFC6,                                |
|                         | TFC7, TFC8, TFC9)                                |
| >>TFC subset 3          | (speech rate 12.65)                              |
| >>> Allowed transport   | (TFC1, TFC2,                                     |
| format combination list | TFC3, TFC4, TFC5,                                |
|                         | TFC6, TFC7, TFC8,                                |
|                         | TFC6, TFC7, TFC8,<br>TFC9, TFC10)                |
| dl-CommonTransChInfo    | , ,  |
| >tfcs-SignallingMode    | Same as UL                                       |
| ul-CommonTransChInfo    |  |
| >tfcs-ID (TDD only)     | 1  |
| >sharedChannelIndicator | FALSE  |
| (TDD only)              |  |
| PhyCH INFORMATION       |  |
| FDD                     |  |
| UL-DPCH-InfoPredef      |  |
| >ul-DPCH-               |  |
| PowerControlInfo        |  |
| >>powerControlAlgorithm | Algorithm 1                                      |
| >>>tpcStepSize          | 1 dB   |
| >tfci-Existence         | TRUE   |
| >puncturingLimit        | 0.84   |
| DL-                     |  |
| CommonInformationPredef |  |
| >dl-DPCH-InfoCommon     | <del>                                     </del> |
|                         | l  |
|                         | 128  |
| >>spreadingFactor       | 128<br>FALSE                                     |
|                         | 128<br>FALSE                                     |

>>positionFixed Fixed

| Configuration  | Signalling on E-DCH on UL   |  |
|--|---|--|
| , and the second | depending based on minimum E-<br>DCH UE category + Signalling on HS-<br>DSCH based minimum HS-DSCH UE |  |
|  | category  |  |
| Ref 25.993   | 7.5.10  |  |
| Default configuration  | 17  |  |
| identity  RB INFORMATION   |   |  |
| rb-Identity  | RB1: 1, RB2: 2, RB3: 3  |  |
|  | ,   |  |
| rlc-InfoChoice   | RIc-info  |  |
| >ul-RLC-Mode   | RB1: UM   |  |
| >>transmissionRLC-   | RB2- RB3: AM<br>RB1: N/A  |  |
| DiscardMode  | RB2- RB3: NoDiscard   |  |
| >>>maxDat  | RB1: N/A  |  |
|  | RB2- RB3: 25  |  |
| >>transmissionWindowSiz  | RB1: N/A  |  |
| e<br>timerDCT  | RB2- RB3: 128   |  |
| >>timerRST   | RB1: N/A<br>RB2- RB3: 200   |  |
| >>max-RST  | RB1: N/A  |  |
| - Finax ite i  | RB2- RB3: 1   |  |
| >>pollingInfo  | RB1: N/A  |  |
|  | RB2- RB3: as below  |  |
| >>>TimerPoll   | RB2- RB3: 100   |  |
| >>>PolIPDU   | RB2- RB3: n/a   |  |
| >>>PollSDU >>>lastTransmissionPDU-   | RB2- RB3: 1<br>RB2- RB3: FALSE  |  |
| Poll   | RDZ- RD3. FALSE   |  |
| >>>lastRetransmissionPD U-Poll   | RB2- RB3: FALSE   |  |
| >>>PollWindow  | RB2- RB3: 99  |  |
| >>segmentationIndication   | RB1- RB3: N/A   |  |
| >dl-RLC-Mode   | RB1: UM<br>RB2- RB3: AM   |  |
| >>DL RLC PDU size  | RB1-RB3: 144  |  |
| >>inSequenceDelivery   | RB1: N/A  |  |
| ,  | RB2- RB3: TRUE  |  |
| >>receivingWindowSize  | RB1: N/A  |  |
| DI O O:  | RB2- RB3: 128   |  |
| >>dl-RLC-StatusInfo  | RB1: N/A  |  |
| >>>timerStatusProhibit   | RB2- RB3: as below<br>RB2- RB3: 100   |  |
| >>>missingPDU-Indicator  | RB2- RB3: TRUE  |  |
| >>segmentationIndication   | RB1- RB3: N/A   |  |
| >>dl-UM-RLC-LI-size  | 7   |  |
| Rb-MappingInfo   |   |  |
| >UL-   | OneLogicalChannel   |  |
| LogicalChannelMappings   |   |  |
| >>UplinkTransport ChannelTypeChoice  |   |  |
| >>ul-  | E-DCH   |  |
| TransportChannelType   |   |  |
| >>>logicalChannelIdentity  | RB1: 1, RB2: 2, RB3: 3  |  |
| >>>E-DCH MAC-d flow identity   | RB1-RB3:0   |  |
| >>>DDI   | RB1: 1, RB2: 2, RB3: 3  |  |
| >>>RLC PDU size  | 144   |  |
| >>mac-   | RB1: 1, RB2: 2, RB3: 3  |  |
| LogicalChannelPriority   |   |  |

| Configuration                                      | Signalling on E-DCH on UL<br>depending based on minimum E-<br>DCH UE category + Signalling on HS-<br>DSCH based minimum HS-DSCH UE<br>category |
|--|--|
| >DL-   | OneLogicalChannel  |
| logicalChannelMappings                             | One manning ention   |
| >>Mapping option 1                                 | One mapping option HS-DSCH   |
| >>>u-<br>TransportChannelType                      | H2-D2CH  |
| >>>Mac-d flow identity                             | RB1- RB3: 0  |
| >>>logicalChannelIdentity                          | RB1: 1, RB2: 2, RB3: 3   |
| TrCH INFORMATION PER TrCH                          | RD1. 1, RD2. 2, RD3. 3   |
| UL-  |  |
| AddReconfTransChInfoList >Uplink transport channel | E-DCH  |
| type   | E-DCH  |
| >UL Transport channel                              |  |
| identity   |  |
| > UL-ParametersChoice                              |  |
| >> E-DCH Transmission                              | 10   |
| Time Interval                                      | 10   |
| >> HARQ info for E-DCH                             |  |
| >>> HARQ IIII0 101 E-DCH                           | Rvtable  |
| >>> HARQ RV Configuration                          | INVIAUIE   |
| >> Added or reconfigured                           | One MAC-d flow   |
| E-DCH MAC-d flow                                   | One MAC-d now  |
| >>> E-DCH MAC-d flow                               | 0  |
|  | 0  |
| identity >>> E-DCH MAC-d flow                      | 4  |
|  | 4  |
| power offset >>> E-DCH MAC-d flow                  | 5  |
| maximum number of                                  | 5  |
| retransmissions                                    |  |
| >>> E-DCH MAC-d flow                               | 0  |
| multiplexing list                                  | Ŭ  |
| >>> transmission grant                             |  |
| typeChoice   |  |
| >>> Non-scheduled                                  | Non-scheduled  |
| transmission grant info                            | Trem definedation  |
| >>>> Max MAC-e PDU                                 | 162  |
| contents size                                      | 102  |
| DL-  |  |
| AddReconfTransChInfoList                           |  |
| >Downlink transport                                | HS-DSCH  |
| channel type                                       |  |
| >DL-ParametersChoice                               |  |
| >>HARQ Info  |  |
| >>>Number of Processes                             | 6  |
| >>>Memory  |  |
| PartitioningChoice                                 |  |
| >>>Implicit  |  |
| >>Added or reconfigured                            |  |
| MAC-d flow   |  |
| >>> MAC-hs queue to add                            |  |
| or reconfigure list                                |  |
| >>>MAC-hs queue Id                                 | 0  |
| >>>MAC-d Flow Identity                             | 0  |
| >>>T1  | 100  |
| >>>>MAC-hs window size                             | 12   |
| >>>MAC-d PDU size info                             | 15   |
| >>>>MAC-d PDU size                                 | 148  |
| >>>>MAC-d PDU size                                 | 0  |
| index  | 0  |
| IIIUEX   |  |

| Configuration            | Signalling on E-DCH on UL<br>depending based on minimum E-<br>DCH UE category + Signalling on HS-<br>DSCH based minimum HS-DSCH UE<br>category |
|--------------------------|--|
| TrCH INFORMATION, COMMON | Null   |

| Configuration                     | 12.2 kbps speech        | 12.2/7.95/5.9/4.75      |
|-----------------------------------|-------------------------|-------------------------|
| - Comigaration                    | +                       | kbps speech +           |
|                                   | 13.6 kbps               | 13.6 kbps               |
|                                   | signalling              | signalling              |
| Ref 25.993                        | 7.1.131                 | 7.1.132                 |
| Default configuration             | 18                      | 19                      |
| identity                          |                         |                         |
| RB INFORMATION                    |                         |                         |
| rb-Identity                       | RB1: 1, RB2: 2,         | RB1: 1, RB2: 2,         |
| -                                 | RB3: 3, RB5: 5,         | RB3: 3, RB5: 5,         |
|                                   | RB6: 6, RB7: 7          | RB6: 6, RB7: 7          |
| rlc-InfoChoice                    | RIc-info                | RIc-info                |
| >ul-RLC-Mode                      | RB1: UM                 | RB1: UM                 |
|                                   | RB2- RB3: AM            | RB2- RB3: AM            |
| transmissism DLC                  | RB5-RB7: TM             | RB5-RB7: TM             |
| >>transmissionRLC-<br>DiscardMode | RB1: N/A<br>RB2- RB3:   | RB1: N/A<br>RB2- RB3:   |
| Discardivioue                     | NoDiscard               | NoDiscard               |
|                                   | RB5- RB7: N/A           | RB5- RB7: N/A           |
| >>>maxDat                         | RB1: N/A                | RB1: N/A                |
| - PP MaxBat                       | RB2- RB3: 15            | RB2- RB3: 15            |
|                                   | RB5- RB7: N/A           | RB5- RB7: N/A           |
| >>transmissionWindowSiz           | RB1: N/A                | RB1: N/A                |
| е                                 | RB2- RB3: 32            | RB2- RB3: 32            |
|                                   | RB5- RB7: N/A           | RB5- RB7: N/A           |
| >>timerRST                        | RB1: N/A                | RB1: N/A                |
|                                   | RB2- RB3: 200           | RB2- RB3: 200           |
| DOT                               | RB5- RB7: N/A           | RB5- RB7: N/A           |
| >>max-RST                         | RB1: N/A<br>RB2- RB3: 1 | RB1: N/A<br>RB2- RB3: 1 |
|                                   | RB5- RB7: N/A           | RB5- RB7: N/A           |
| >>pollingInfo                     | RB1: N/A                | RB1: N/A                |
| poininginio                       | RB2- RB3: as below      | RB2- RB3: as below      |
|                                   | RB5- RB7: N/A           | RB5- RB7: N/A           |
| >>>TimerPoll                      | RB2- RB3: 100           | RB2- RB3: 100           |
| >>>PollPDU                        | RB2- RB3: n/a           | RB2- RB3: n/a           |
| >>>PollSDU                        | RB2- RB3: 1             | RB2- RB3: 1             |
| >>>lastTransmissionPDU-<br>Poll   | RB2- RB3: FALSE         | RB2- RB3: FALSE         |
| >>>lastRetransmissionPD<br>U-Poll | RB2- RB3: TRUE          | RB2- RB3: TRUE          |
| >>>PollWindow                     | RB2- RB3: 99            | RB2- RB3: 99            |
| >>>timerPollPeriodic              | RB2- RB3: n/a           | RB2- RB3: n/a           |
| >>segmentationIndication          | RB1- RB3: N/A           | RB1- RB3: N/A           |
| ad DLC Mada                       | RB5- RB7: FALSE         | RB5- RB7: FALSE         |
| >dl-RLC-Mode                      | RB1: UM<br>RB2- RB3: AM | RB1: UM<br>RB2- RB3: AM |
|                                   | RB5- RB7: TM            | RB5- RB7: TM            |
| >>inSequenceDelivery              | RB1: N/A                | RB1: N/A                |
|                                   | RB2- RB3: TRUE          | RB2- RB3: TRUE          |
|                                   | RB5- RB7: N/A           | RB5- RB7: N/A           |

| Configuration   | 12.2 kbps speech<br>+<br>13.6 kbps<br>signalling                                       | 12.2/7.95/5.9/4.75<br>kbps speech +<br>13.6 kbps<br>signalling        |
|---|--|---|
| >>receivingWindowSize                                   | RB1: N/A<br>RB2- RB3: 32<br>RB5- RB7: N/A  | RB1: N/A<br>RB2- RB3: 32<br>RB5- RB7: N/A                             |
| >>dl-RLC-StatusInfo                                     | RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A  | RB1: N/A<br>RB2- RB3: as below<br>RB5- RB7: N/A                       |
| >>>timerStatusProhibit                                  | RB2- RB3: 100  | RB2- RB3: 100   |
| >>>missingPDU-Indicator                                 | RB2- RB3: TRUE   | RB2- RB3: TRUE  |
| >>>timerStatusPeriodic                                  | RB2- RB3: n/a  | RB2- RB3: n/a   |
| >>segmentationIndication                                | RB1- RB3: N/A<br>RB5- RB7: FALSE   | RB1- RB3: N/A<br>RB5- RB7: FALSE                                      |
| rb-MappingInfo  |  |   |
| >UL-<br>LogicalChannelMappings                          | OneLogicalChannel  | OneLogicalChannel   |
| >>ul-<br>TransportChannelType                           | Dch  | Dch   |
| >>>transportChannelldentit<br>y                         | RB1- RB3: 9<br>RB5: 1, RB6: 2,<br>RB7: 3   | RB1- RB3: 9<br>RB5: 1, RB6: 2,<br>RB7: 3                              |
| >>logicalChannelIdentity                                | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A   | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A                            |
| >>rlc-SizeList  | RB1- RB3:<br>configured<br>RB5- RB7: N/A   | RB1- RB3:<br>configured<br>RB5- RB7: N/A                              |
| >>mac-<br>LogicalChannelPriority                        | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: 5   | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: 5                              |
| >DL-<br>logicalChannelMappingList                       |  |   |
| >>Mapping option 1 >>>dl- TransportChannelType          | One mapping option  Dch  | One mapping option Dch  |
| >>>transportChannellden tity                            | RB1- RB3: 9<br>RB5: 1, RB6: 2,<br>RB7: 3   | RB1- RB3: 9<br>RB5: 1, RB6: 2,<br>RB7: 3                              |
| >>>logicalChannelIdentity                               | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A   | RB1: 1, RB2: 2,<br>RB3: 3<br>RB5- RB7: N/A                            |
| TrCH INFORMATION PER TrCH                               |  |   |
| UL-   |  |   |
| AddReconfTransChInfoList >Uplink transport channel type | dch  | dch   |
| >transportChannelIdentity                               | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 9  | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 9                             |
| >transportFormatSet                                     | DedicatedTransChT<br>FS  | DedicatedTransChT<br>FS   |
| >>dynamicTF-information                                 |  |   |
| >>>tf0/ tf0,1   | TrCH1: (0x81) TrCH2: (0x 103, 1x103) TrCH3: (0x 60, 1x60) TrCH4: (0x144, 1x144, 2x144, | TrCH1: (0x 81)<br>TrCH2: (0x 103)<br>TrCH3: (0x 60)<br>TrCH4: (0x144) |
|   | 3x144, 4x144)  | 5   |
| >>>rlcSize  | BitMode  | BitMode   |

| Configuration               | 12.2 kbps speech   | 12.2/7.95/5.9/4.75  |
|-----------------------------|--------------------|---------------------|
| Januarion Januarion         | +                  | kbps speech +       |
|                             | 13.6 kbps          | 13.6 kbps           |
|                             | signalling         | signalling          |
|                             |                    |                     |
| >>>>sizeType                | TrCH1: type 1: 81  | TrCH1: type 1: 81   |
|                             | TrCH2: type 1: 103 | TrCH2: type 1: 103  |
|                             | TrCH3: type 1: 60  | TrCH3: type 1: 60   |
|                             | TrCH4: 2: type 2,  | TrCH4: 2: type 2,   |
|                             | part1= 2, part2= 0 | part1= 2, part2= 0  |
|                             | (144)              | (144)               |
| >>>>numberOfTbSizeList      | TrCH1: Zero        | TrCH1-4: Zero       |
|                             | TrCH4: Zero, One   |                     |
|                             | TrCH4: Zero, one,  |                     |
| >>>>logicalChannelList      | 2, 3, 4<br>All     | All                 |
| >>>tf 1                     | TrCH1: (1x39)      | TrCH1: (1x39)       |
|                             | TrCH2- TrCH4: N/A  | TrCH2: (1x53)       |
|                             | 110112-110114.19/A | TrCH3: (1x60)       |
|                             |                    | TrCH4: (1x144,      |
|                             |                    | 2x144, 3x144,       |
|                             |                    | 4x144)              |
| >>>>numberOfTransportBl     | TrCH1: One         | TrCH1-3: One        |
| ocks                        |                    | TrCH4: One, 2, 3, 4 |
| >>>rlc-Size                 | TrCH1: BitMode     | TrCH1: BitMode      |
| >>>>sizeType                | TrCH1: 1: 39       | TrCH1: 1: 39        |
|                             |                    | TrCH2: 1: 53        |
|                             |                    | TrCH3: 1: 60        |
|                             |                    | TrCH4: 2: type 2,   |
|                             |                    | part1= 2, part2= 0  |
|                             |                    | (144)               |
| >>>numberOfTbSizeList       | TrCH1: One         | TrCH1: One          |
| >>>>logicalChannelList      | TrCH1: all         | TrCH1: all          |
| >>>tf 2                     | TrCH1: (1x81)      | TrCH1: (1x42)       |
|                             | TrCH2- TrCH4: N/A  | TrCH2: (1x63)       |
| www.mah.avOfTrananawtDl     | TrOUIA: On a       | TrCH3- TrCH4: N/A   |
| >>>numberOfTransportBl ocks | TrCH1: One         | TrCH1-2: One        |
| >>>rlc-Size                 | TrCH1: BitMode     | TrCH1: BitMode      |
| >>>>sizeType                | TrCH1: type 1: 81  | TrCH1: type 1: 42   |
| >>>>size i ype              | TICITI. type 1. 01 | TrCH2: type 1: 42   |
| >>>>numberOfTbSizeList      | TrCH1: One         | TrCH1: One          |
| >>>logicalChannelList       | TrCH1: all         | TrCH1: all          |
| >>>tf 3                     |                    | TrCH1: (1x55)       |
|                             |                    | TrCH2: (1x84)       |
|                             |                    | TrCH3- TrCH4: N/A   |
| >>>>numberOfTransportBl     |                    | TrCH1-2: One        |
| ocks                        |                    |                     |
| >>>>rlc-Size                |                    | TrCH1: BitMode      |
| >>>>sizeType                |                    | TrCH1: type 1: 55   |
| ]                           |                    | TrCH2: type 1: 84   |
| >>>>numberOfTbSizeList      |                    | TrCH1-2: One        |
| >>>>logicalChannelList      |                    | TrCH1: all          |
| >>>tf 4                     |                    | TrCH1: (1x75)       |
|                             |                    | TrCH2: (1x103)      |
|                             |                    | TrCH3- TrCH4: N/A   |
| >>>>numberOfTransportBl     |                    | TrCH1-2: One        |
| ocks                        |                    |                     |
| >>>rlc-Size                 |                    | TrCH1: BitMode      |
| >>>>sizeType                |                    | TrCH1: type 1: 75   |
|                             |                    | TrCH2: type 1: 103  |
| >>>>numberOfTbSizeList      |                    | TrCH1-2: One        |
| >>>>logicalChannelList      |                    | TrCH1: all          |
| >>>tf 5                     |                    | TrCH1: (1x81)       |
|                             |                    | TrCH2- TrCH4: N/A   |

| Configuration   | 12.2 kbps speech<br>+<br>13.6 kbps<br>signalling   | 12.2/7.95/5.9/4.75<br>kbps speech +<br>13.6 kbps<br>signalling                           |
|---|--|--|
| >>>>numberOfTransportBl ocks                              |  | TrCH1: One   |
| >>>rlc-Size   |  | TrCH1: BitMode   |
| >>>>sizeType  |  | TrCH1: type 1: 81  |
| >>>numberOfTbSizeList                                     |  | TrCH1: One   |
| >>>>logicalChannelList                                    |  | TrCH1: all   |
| >>semistaticTF-Information                                |  |  |
| >>>tti  | TrCH1- TrCH3: 20<br>TrCH4: 40  | TrCH1- TrCH3: 20<br>TrCH4: 40  |
| >>>channelCodingType                                      | Convolutional  | Convolutional  |
| >>>codingRate   | TrCH1- TrCH2:<br>Third<br>TrCH3: Half<br>TrCH4: Third                                    | TrCH1- TrCH2:<br>Third<br>TrCH3: Half<br>TrCH4: Third                                    |
| >>>rateMatchingAttribute                                  | TrCH1: 200<br>TrCH2: 190<br>TrCH3: 235<br>TrCH4: 160                                     | TrCH1: 200<br>TrCH2: 190<br>TrCH3: 235<br>TrCH4: 160                                     |
| >>>crc-Size   | TrCH1: 12<br>TrCH2- TrCH3: 0<br>TrCH4: 16  | TrCH1: 12<br>TrCH2- TrCH3: 0<br>TrCH4: 16  |
| AddReconfTransChInfoList >Downlink transport              | dch  |  |
| channel type  |  |  |
| >dl-<br>TransportChannelIdentity<br>(should be as for UL) | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 9  | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 9  |
| >tfs-SignallingMode                                       | Explicit <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""></only> | Explicit <only and="" below="" different="" is="" on="" shown="" tf0="" trch1=""></only> |
| >>transportFormatSet                                      | DedicatedTransChT FS   | DedicatedTransChT<br>FS  |
| >>>dynamicTF-information                                  |  |  |
| >>>>tf0/ tf0,1  | TrCH1: (1x0)   | TrCH1: (1x0)   |
| >>>rlcSize  | bitMode  | bitMode  |
| >>>>sizeType  | TrCH1: type 1: 0   | TrCH1: type 1: 0   |
| >>>>numberOfTbSizeList                                    | TrCH1: One   | TrCH1: One   |
| >>>>logicalChannelList                                    | All  | All  |
| >>ULTrCH-Id   | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 9  | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 9  |
| >dch-QualityTarget >>bler-QualityValue                    | TrCH1: 7x10 <sup>-3</sup><br>TrCH2- TrCH4:<br>Absent                                     | TrCH1: 7x10 <sup>-3</sup><br>TrCH2- TrCH4:<br>Absent                                     |
| TrCH INFORMATION,<br>COMMON                               |  |  |
| ul-CommonTransChInfo                                      | 4  | 4  |
| >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only)    | FALSE  | FALSE  |
| >tfc-Subset   | Absent, not required   | Absent, not required   |
| >ul-TFCS  | Normal TFCI  | Normal TFCI  |
|   | signalling   | signalling   |
| >>explicitTFCS-<br>ConfigurationMode                      | Complete   | Complete   |
| >>>ctfcSize   | Ctfc6Bit   | Ctfc8Bit   |
| >>>>TFCS representation                                   | Addition   | Addition   |
| >>>>TFCS list   |  |  |

| Configuration                 | 12.2 kbps speech<br>+<br>13.6 kbps<br>signalling | 12.2/7.95/5.9/4.75<br>kbps speech +<br>13.6 kbps<br>signalling |
|-------------------------------|--|--|
| >>>>TFC 1                     | (TF0, TF0, TF0,<br>TF0)                          | (TF0, TF0, TF0,<br>TF0)  |
| >>>>>ctfc                     | 0  | 0  |
| >>>>>gainFactorInform ation   | Computed   | Computed   |
| >>>>>>referenceTFCId          | 0  | 0  |
| >>>>TFC 2                     | (TF1, TF0, TF0,<br>TF0)                          | (TF1, TF0, TF0,<br>TF0)  |
| >>>>>ctfc                     | 1  | 1  |
| >>>>>gainFactorInform ation   | Computed   | Computed   |
| >>>>>>referenceTFCId          | 0  | 0  |
| >>>>TFC 3                     | (TF2, TF1, TF1, TF0)                             | (TF2, TF1, TF0, TF0)   |
| >>>>>ctfc                     | 11   | 8  |
| >>>>>gainFactorInform ation   | Computed   | Computed   |
| >>>>>>referenceTFCld          | 0  | 0  |
| >>>>TFC 4                     | (TF0, TF0, TF0, TF1)                             | (TF3, TF2, TF0, TF0)   |
| >>>>>ctfc                     | 12   | 15   |
| >>>>>gainFactorInform ation   | Computed   | Computed   |
| >>>>>>referenceTFCld          | 0  | 0  |
| >>>>TFC 5                     | (TF1, TF0, TF0,<br>TF1)                          | (TF4, TF3, TF0,<br>TF0)  |
| >>>>>ctfc                     | 13   | 22   |
| >>>>>gainFactorInform ation   | Computed   | Computed   |
| >>>>>>referenceTFCId          | 0  | 0  |
| >>>>>TFC 6                    | (TF2, TF1, TF1,<br>TF1)                          | (TF5, TF4, TF1,<br>TF0)  |
| >>>>>ctfc                     | 23   | 59   |
| >>>>> sgainFactorInform ation | Signalled  | Computed   |
| >>>>> βc (FDD only)           | 10   | N/A  |
| >>>>>βd                       | 15   | N/A  |
| >>>>>>referenceTFCld          | 0  | 0  |
| >>>>TFC 7                     | (TF0, TF0, TF0,<br>TF2)                          | (TF0,TF0,TF0,TF1)  |
| >>>>>ctfc                     | 24   | 60   |
| >>>>>gainFactorInform ation   | Computed   | Computed   |
| >>>>>>referenceTFCId          | 0  | 0  |
| >>>>TFC 8                     | (TF1, TF0, TF0,<br>TF2)                          | (TF1,TF0,TF0,TF1)  |
| >>>>>ctfc                     | 25   | 61   |
| >>>>>gainFactorInform ation   | Computed   | Computed   |
| >>>>>>referenceTFCld          | 0  | 0  |
| >>>>TFC 9                     | (TF0, TF0, TF0, TF3)                             | (TF2,TF1,TF0,TF1)  |
| >>>>>ctfc                     | 36   | 68   |
| >>>>>gainFactorInform ation   | Computed   | Computed   |
| >>>>>referenceTFCId           | 0  | 0  |
| >>>>TFC 10                    | (TF1, TF0, TF0,<br>TF3)                          | (TF3,TF2,TF0,TF1)  |
| >>>>>ctfc                     | 37   | 75   |

| Configuration                              | 12.2 kbps speech             | 12.2/7.95/5.9/4.75                       |
|--|------------------------------|--|
| Comiguration                               | +<br>13.6 kbps<br>signalling | kbps speech +<br>13.6 kbps<br>signalling |
| >>>>>gainFactorInform                      | Computed                     | Computed                                 |
| ation                                      | Computed                     | Computou                                 |
| >>>>>>referenceTFCld                       | 0                            | 0  |
| >>>>TFC 11                                 | (TF0, TF0, TF0,<br>TF4)      | (TF4,TF3,TF0,TF1)                        |
| >>>>>ctfc                                  | 48                           | 82                                       |
| >>>>>gainFactorInform ation                | Computed                     | Computed                                 |
| >>>>>referenceTFCId                        | 0                            | (TES TE 4 TE 4 TE 4)                     |
| >>>>TFC 12                                 |                              | (TF5,TF4,TF1,TF1)                        |
| >>>>>gainFactorInform                      |                              | Signalled                                |
| >>>>>βc (FDD only)                         |                              | 10                                       |
| >>>>>βd                                    |                              | 15                                       |
| >>>>>referenceTFCId                        |                              | 0  |
| >>>>TFC 13                                 |                              | (TF0,TF0,TF0,TF2)                        |
| >>>>>ctfc                                  |                              | 120                                      |
| >>>>>gainFactorInform                      |                              | Computed                                 |
| >>>>>referenceTFCId                        |                              | 0  |
| >>>>TFC 14                                 |                              | (TF1, TF0, TF0,<br>TF2)                  |
| >>>>>ctfc                                  |                              | 121                                      |
| >>>>>gainFactorInform                      |                              | Computed                                 |
| >>>>>referenceTFCld                        |                              | 0  |
| >>>>TFC 15                                 |                              | (TF0,TF0,TF0,TF3)                        |
| >>>>>ctfc                                  |                              | 180                                      |
| >>>>>gainFactorInform                      |                              | Computed                                 |
| >>>>>referenceTFCld                        |                              | 0  |
| >>>>TFC 16                                 |                              | (TF1, TF0, TF0,<br>TF3)                  |
| >>>>>ctfc                                  |                              | 181                                      |
| >>>>>gainFactorInform ation                |                              | Computed                                 |
| >>>>>referenceTFCId                        |                              | 0  |
| >>>>TFC 17                                 |                              | (TF0,TF0,TF0,TF4)                        |
| >>>>>ctfc                                  |                              | 240                                      |
| >>>>>gainFactorInform ation                |                              | Computed                                 |
| >>>>>>referenceTFCId                       |                              | 0  |
| dl-CommonTransChInfo                       | Same as UL                   | Same as UL                               |
| >tfcs-SignallingMode PhyCH INFORMATION FDD | Same as UL                   | Same as UL                               |
| UL-DPCH-InfoPredef >ul-DPCH-               |                              |  |
| PowerControlInfo                           |                              |  |
| >>powerControlAlgorithm                    | Algorithm 1                  | Algorithm 1                              |
| >>>tpcStepSize                             | 1 dB                         | 1 dB                                     |
| >tfci-Existence                            | TRUE<br>0.84                 | TRUE<br>0.84                             |
| >puncturingLimit DL-                       | 0.04                         | 0.04                                     |
| CommonInformationPredef                    |                              |  |
| >dl-DPCH-InfoCommon                        |                              |  |
| >>spreadingFactor                          | 128                          | 128                                      |
| >>tfci-Existence >>pilotBits               | TRUE 4                       | TRUE 4                                   |
| ~>pii0iDii3                                | <del>-</del>                 | _ <del>_</del>                           |

| Configuration   | 12.2 kbps speech<br>+<br>13.6 kbps<br>signalling | 12.2/7.95/5.9/4.75<br>kbps speech +<br>13.6 kbps<br>signalling |
|-----------------|--|--|
| >>positionFixed | Flexible   | Flexible   |

| Configuration   | 64kbps conv. CS-                  | 12.65/8.85/6.6 kbps               |
|---|-----------------------------------|-----------------------------------|
|   | data +<br>13.6 kbps signalling    | speech +<br>13.6 kbps signalling  |
|   | 13.0 Kbps signalling              | (without SRB#5)                   |
| Ref 25.993  | 7.1.133                           | 7.1.134                           |
| Default configuration identity                            | 20                                | 21                                |
| RB INFORMATION  |                                   |                                   |
| Rb-Identity   | RB1: 1, RB2: 2, RB3:              | RB1: 1, RB2: 2, RB3:              |
|   | 3, RB5: 5                         | 3, RB5: 5, RB6: 6,                |
| rlc-InfoChoice  | RIc-info                          | RB7: 7,                           |
| >ul-RLC-Mode  | RB1: UM                           | RB1: UM                           |
| >u-NEC-Wode   | RB2- RB3: AM                      | RB2- RB3: AM                      |
|   | RB5: TM                           | RB5-RB7: TM                       |
| >>transmissionRLC-DiscardMode                             | RB1: N/A                          | RB1: N/A                          |
|   | RB2- RB3: NoDiscard               | RB2- RB3: NoDiscard               |
|   | RB5: N/A                          | RB5- RB7: N/A                     |
| >>>maxDat   | RB1: N/A                          | RB1: N/A                          |
|   | RB2- RB3: 25                      | RB2- RB3: 25                      |
| Annuagias' NAP 1 O'                                       | RB5: N/A                          | RB5- RB7: N/A                     |
| >>transmissionWindowSize                                  | RB1: N/A                          | RB1: N/A                          |
|   | RB2- RB3: 32<br>RB5: N/A          | RB2- RB3: 32<br>RB5- RB7: N/A     |
| >>timerRST  | RB1: N/A                          | RB1: N/A                          |
| // unicity i  | RB2- RB3: 200                     | RB2- RB3: 200                     |
|   | RB5: N/A                          | RB5- RB7: N/A                     |
| >>max-RST   | RB1: N/A                          | RB1: N/A                          |
|   | RB2- RB3: 1                       | RB2- RB3: 1                       |
|   | RB5: N/A                          | RB5- RB7: N/A                     |
| >>pollingInfo   | RB1: N/A                          | RB1: N/A                          |
|   | RB2- RB3: as below                | RB2- RB3: as below                |
|   | RB5: N/A                          | RB5- RB7: N/A                     |
| >>>TimerPoll  | RB2- RB3: 100                     | RB2- RB3: 100                     |
| >>>PollPDU  | RB2- RB3: n/a                     | RB2- RB3: n/a                     |
| >>>PollSDU  | RB2- RB3: 1                       | RB2- RB3: 1                       |
| >>>lastTransmissionPDU-Poll >>>lastRetransmissionPDU-Poll | RB2- RB3: FALSE<br>RB2- RB3: TRUE | RB2- RB3: FALSE<br>RB2- RB3: TRUE |
| >>>PollWindow   | RB2- RB3: 99                      | RB2- RB3: 99                      |
| >>segmentationIndication                                  | RB1- RB3: N/A                     | RB1- RB3: N/A                     |
| >>3cgmcntationnalcation                                   | RB5: FALSE                        | RB5- RB7: FALSE                   |
| >dl-RLC-Mode  | RB1: UM                           | RB1: UM                           |
|   | RB2- RB3: AM                      | RB2- RB3: AM                      |
|   | RB5: TM                           | RB5- RB7: TM                      |
| >>inSequenceDelivery                                      | RB1: N/A                          | RB1: N/A                          |
|   | RB2- RB3: TRUE                    | RB2- RB3: TRUE                    |
|   | RB5: N/A                          | RB5- RB7: N/A                     |
| >>receivingWindowSize                                     | RB1: N/A                          | RB1: N/A                          |
|   | RB2- RB3: 32                      | RB2- RB3: 32                      |
| >>dl-RLC-StatusInfo                                       | RB5: N/A<br>RB1: N/A              | RB5- RB7: N/A<br>RB1: N/A         |
| //ui-IVEO-GlatusIIIIU                                     | RB2- RB3: as below                | RB2- RB3: as below                |
|   | RB5: N/A                          | RB5- RB7: N/A                     |
| >>>timerStatusProhibit                                    | RB2- RB3: 100                     | RB2- RB3: 100                     |
| >>>missingPDU-Indicator                                   | RB2- RB3: TRUE                    | RB2- RB3: TRUE                    |
| >>segmentationIndication                                  | RB1- RB3: N/A                     | RB1- RB3: N/A                     |
|   | RB5: FALSE                        | RB5- RB7: FALSE                   |
| rb-MappingInfo  |                                   |                                   |
| >UL-LogicalChannelMappings                                | OneLogicalChannel                 | OneLogicalChannel                 |
| >>ul-TransportChannelType                                 | Dch                               | Dch                               |
| >>>transportChannelIdentity                               | RB1- RB3: 9                       | RB1- RB3: 9                       |
|   | RB5: 1                            | RB5: 1, RB6: 2, RB7:              |
| >>logicalChannelIdentity                                  | RB1: 1, RB2: 2, RB3:              | 3.<br>RB1: 1, RB2: 2, RB3:        |
| >>iogicalonarinelidentity                                 | RB1: 1, RB2: 2, RB3:<br>  3       | RB1: 1, RB2: 2, RB3:<br>  3       |
|   | RB5: N/A                          | RB5- RB7: N/A                     |
| <u>L</u>  |                                   | 1                                 |

| >>rlc-SizeList  | RB1- RB3: configured RB5: N/A   | RB1- RB3: configured<br>RB5- RB7: N/A   |
|---|---|---|
| >>mac-LogicalChannelPriority                            | RB1: 1, RB2: 2, RB3: 3  | RB1: 1, RB2: 2, RB3: 3  |
|   | RB5: 5  | RB5- RB7: 5   |
| >DL-logicalChannelMappingList                           |   |   |
| >>Mapping option 1                                      | One mapping option  | One mapping option  |
| >>>dl-TransportChannelType >>>>transportChannelIdentity | Dch<br>RB1- RB3: 9  | Dch<br>RB1- RB3: 9  |
| 222 transportonal mendentity                            | RB5: 1  | RB5: 1, RB6: 2, RB7: 3,   |
| >>>logicalChannelIdentity                               | RB1: 1, RB2: 2, RB3:  | RB1: 1, RB2: 2, RB3:  |
|   | 3   | 3<br>DD5 DD7: N/A   |
| TrCH INFORMATION PER TrCH                               | RB5: N/A  | RB5- RB7: N/A   |
| UL-AddReconfTransChInfoList                             |   |   |
| >Uplink transport channel type                          | dch   | Dch   |
| >transportChannelIdentity                               | TrCH1: 1, TrCH2: 9  | TrCH1: 1, TrCH2: 2,<br>TrCH3: 3, TrCH4: 9   |
| >transportFormatSet                                     | DedicatedTransChTF<br>S   | DedicatedTransChTF<br>S   |
| >>dynamicTF-information                                 | T 0114 (0.015   | T 0114 (0 =5)   |
| >>>tf0/ tf0,1,2,3,4                                     | TrCH1: (0x640,<br>2x640)<br>TrCH2: (0x144,<br>1x144, 2x144, 3x144,<br>4x144)              | TrCH1: (0x72)<br>TrCH2: (0x 181)<br>TrCH3: (0x60)<br>TrCH4: (0x144,<br>1x144, 2x144, 3x144,<br>4x144)                             |
| >>>rlcSize  | TrCH1: OctetMode<br>TrCH2:BitMode   | BitMode   |
| >>>>sizeType  | TrCH1: type 2, part1=<br>11, part2= 2 (640)<br>TrCH2: type 2, part1=<br>2, part2= 0 (144) | TrCH1: type 1: 72<br>TrCH2: type 2: part1=<br>6, part2= 5<br>TrCH3: type1: 60<br>TrCH4: 2: type 2,<br>part1= 2, part2= 0<br>(144) |
| >>>>numberOfTbSizeList                                  | TrCH1: Zero, 2<br>TrCH2: Zero, one, 2,<br>3, 4  | TrCH1-3: Zero<br>TrCH4: Zero, one, 2,<br>3, 4   |
| >>>logicalChannelList                                   | All   | All   |
| >>>tf 1   |   | TrCH1: (1x40)<br>TrCH2: (1x 78)<br>TrCH3: N/A<br>TrCH4: N/A   |
| >>>>numberOfTransportBlocks                             |   | TrCH1: One<br>TrCH2: One  |
| >>>rlc-Size   |   | TrCH1-2: BitMode  |
| >>>>sizeType  |   | TrCH1: 1: 40<br>TrCH2: 1: 78  |
| >>>numberOfTbSizeList                                   |   | TrCH1-2: One  |
| >>>logicalChannelList                                   |   | TrCH1: all  |
| >>>tf 2   |   | TrCH1: (1x54)   |
|   |   | TrCH2: (1x113)  |
|   |   | TrCH3: N/A  |
| >>> numberOfTrenenertDlocks                             |   | TrCH4: N/A<br>TrCH1: One  |
| >>>numberOfTransportBlocks                              |   | TrCh1: One<br>TrCh2: One  |
| >>>rlc-Size   |   | TrCH1: BitMode  |
| >>>>sizeType  |   | TrCH1: type 1: 54   |
|   |   | TrCH2: type 1: 113  |
| >>>>numberOfTbSizeList                                  |   | TrCH1: One<br>TrCH2: One  |
| >>>logicalChannelList                                   |   | TrCH1: all<br>TrCH2: all  |

| >>>tf 3                                       |                           | TrCH1: (1x64)                                    |
|---|---------------------------|--|
|   |                           | TrCH2: (1x181)                                   |
|   |                           | TrCH3: N/A                                       |
|   |                           | TrCH4: N/A                                       |
| >>>numberOfTransportBlocks                    |                           | TrCH1: One                                       |
|   |                           | TrCh2: One                                       |
| >>>rlc-Size                                   |                           | TrCH1: BitMode                                   |
| >>>>sizeType                                  |                           | TrCH1: type 1: 64                                |
| , , , ,                                       |                           | TrCH2: type 2:                                   |
|   |                           | part1=6, part2= 5                                |
| >>>numberOfTbSizeList                         |                           | TrCH1: One                                       |
| - Franksi en Belzeziet                        |                           | TrCH2: One                                       |
| >>>logicalChannelList                         |                           | TrCH1: all                                       |
|   |                           | TrCH2: all                                       |
| >>>tf 4                                       |                           | TrCH1: (1x72)                                    |
| >>>u <del>-</del>                             |                           | TrCH2: N/A                                       |
|   |                           | TrCH3: N/A                                       |
|   |                           | TrCH4: N/A                                       |
|   |                           |  |
| >>>numberOfTransportBlocks                    |                           | TrCH1: One                                       |
| >>>rlc-Size                                   |                           | TrCH1: BitMode                                   |
| >>>>sizeType                                  |                           | TrCH1: type 1: 72                                |
| >>>>numberOfTbSizeList                        |                           | TrCH1: One                                       |
| >>>logicalChannelList                         |                           | TrCH1: all                                       |
| >>semistaticTF-Information                    |                           |  |
| >>>tti  | TrCH1: 20                 | TrCH1- TrCH3: 20                                 |
|   | TrCH2: 40                 | TrCH4: 40  |
| >>>channelCodingType                          | TrCH1: Turbo              | Convolutional                                    |
|   | TrCH2: Convolutional      | Conversion and                                   |
| >>>codingRate                                 | TrCH1: N/A                | TrCH1- TrCH3: Third                              |
|   | 110111.14//               | TrCH4: Third                                     |
|   | TrCH2: Third              | 110114. 111110                                   |
|   |                           |  |
| >>>rateMatchingAttribute                      | T-0114 470                | TrCH1: 200                                       |
|   | TrCH1: 170                | TrCH2: 190                                       |
|   |                           | TrCH3: 256                                       |
|   | TrCH2: 160                | TrCH4: 170                                       |
|   | 110112. 100               |  |
| >>>crc-Size                                   |                           | TrCH1: 12  |
| 222010 GIZO                                   | TrCH1: 16                 | TrCH2: 0   |
|   |                           | TrCH3: 0   |
|   | TrCH2: 16                 | TrCH4: 16  |
|   | 11002. 10                 | 110114. 10                                       |
| DL-AddReconfTransChInfoList                   |                           |  |
|   | dele                      | Dak  |
| >Downlink transport channel type              | dch                       | Dch  |
| >dl-TransportChannelIdentity                  | TrCH1: 1, TrCH2: 9        |  |
| >tfs-SignallingMode                           | SameAsUL                  | Independent                                      |
|   |                           | <only is<="" on="" td="" tf0="" trch1=""></only> |
|   |                           | different and shown                              |
|   |                           | below>   |
| >>transportFormatSet                          |                           |  |
| >>>dynamicTF-information                      |                           |  |
| >>>tf0/ tf0,1                                 |                           | TrCH1: (1x0)                                     |
| >>>rlcSize                                    |                           | BitMode  |
| >>>sizeType                                   |                           | TrCH1: type 1: 0                                 |
| >>>numberOfTbSizeList                         |                           | TrCH1: One                                       |
| >>>logicalChannelList                         |                           | All  |
| >>>semistaticTF-Information                   |                           | same as UL                                       |
|   | T-014.4 T-010.0           |  |
| >>ULTrCH-Id                                   | TrCH1: 1, TrCH2: 9        | TrCH1: 1, TrCH2: 2,                              |
| 110 5 7                                       |                           | TrCH3: 3, TrCH4: 9,                              |
| >dch-QualityTarget                            |                           |  |
| >>bler-QualityValue                           | TrCH1: 2x10 <sup>-3</sup> | TrCH1: 7x10 <sup>-3</sup>                        |
|   | TrCH2: Absent             | TrCH2: Absent                                    |
|   |                           | TrCH3: Absent                                    |
|   |                           | TrCH4: Absent                                    |
|   | <del> </del>              |  |
| TrCH INFORMATION COMMON                       |                           |  |
| TrCH INFORMATION, COMMON ul-CommonTransChInfo |                           |  |

| >tfcs-ID (TDD only)          | 1                    | 1                    |
|------------------------------|----------------------|----------------------|
| >sharedChannelIndicator (TDD | FALSE                | FALSE                |
| only)                        |                      |                      |
| > tfc-Subset                 | Absent, not required | Absent, not required |
| >ul-TFCS                     | Normal TFCI          | Normal TFCI          |
|                              | signalling           | signalling           |
| >>explicitTFCS-              | Complete             | Complete             |
| ConfigurationMode            |                      |                      |
| >>>ctfcSize                  | Ctfc4Bit             | Ctfc6Bit             |
| >>>>TFCS representation      | Addition             | Addition             |
| >>>>TFC list                 |                      |                      |
| >>>>TFC 1                    | (TF0, TF0)           | (TF0, TF0, TF0, TF0) |
| >>>>>ctfc                    | 0                    | 0                    |
| >>>>>gainFactorInformation   | Computed             | Computed             |
| >>>>>referenceTFCId          | 0                    | 0                    |
| >>>>TFC 2                    | (TF1, TF0)           | (TF1, TF0, TF0, TF0) |
| >>>>>ctfc                    | 1                    | 1                    |
| >>>>>gainFactorInformation   | Computed             | Computed             |
| >>>>>βc (FDD only)           | N/A                  | N/A                  |
| >>>>>βd                      | N/A                  | N/A                  |
| >>>>>referenceTFCld          | 0                    | 0                    |
| >>>>TFC 3                    | (TF0, TF1)           | (TF2, TF1, TF0, TF0) |
| >>>>>ctfc                    | 2                    | 7                    |
| >>>>>gainFactorInformation   | Computed             | Computed             |
| >>>>>referenceTFCId          | 0                    | 0                    |
| >>>>TFC 4                    | (TF1, TF1)           | (TF3, TF2, TF0, TF0) |
| >>>>>ctfc                    | 3                    | 13                   |
| >>>>>gainFactorInformation   | Signalled            | Computed             |
| >>>>>>βc (FDD only)          | 8                    | N/A                  |
| >>>>>βd                      | 15                   | N/A                  |

| TECIA  | 10                          |  |
|--|-----------------------------|--|
| >>>>>referenceTFCId  | 0                           | 0  |
| >>>>TFC 5  | (TF0, TF2)                  | (TF4, TF3, TF0, TF0)   |
| >>>>>ctfc  | 4                           | 19   |
| >>>>>gainFactorInformation   | Computed                    | Computed   |
| >>>>>>referenceTFCId   | 0                           | 0  |
| >>>>TFC 6  | (TF0, TF3)                  | (TF0, TF0, TF0, TF1)   |
|  |                             |  |
| >>>>>ctfc  | 6                           | 20   |
| >>>>>gainFactorInformation   | Computed                    | Computed   |
| >>>>>referenceTFCId  | 0                           | 0  |
| >>>>TFC 7  | (TF0, TF4)                  | (TF1, TF0, TF0, TF1)   |
|  | 8                           | 21   |
| >>>>>ctfc  | <u> </u>                    |  |
| >>>>>gainFactorInformation   | Computed                    | Computed   |
| >>>>>referenceTFCId  | 0                           | 0  |
| >>>>TFC 8  |                             | (TF2, TF1, TF0, TF1)   |
| >>>>>ctfc  |                             | 27   |
|  |                             |  |
| >>>>>gainFactorInformation   |                             | computed   |
| >>>>>>referenceTFCId   |                             | 0  |
| >>>>TFC 9  |                             | (TF3, TF2, TF0, TF1)   |
| >>>>>ctfc  |                             | 33   |
| >>>> sgainFactorInformation  |                             | computed   |
|  |                             |  |
| >>>>>>referenceTFCld   |                             | (TE4 TE0 TE0 TE4)  |
| >>>>TFC 10   |                             | (TF4, TF3, TF0, TF1)   |
| >>>>>ctfc  |                             | 39   |
| >>>>>gainFactorInformation   |                             | signalled  |
|  |                             | 10   |
| >>>>> βc (FDD only)  | +                           |  |
| >>>>>βd  |                             | 15   |
| >>>>>referenceTFCId  |                             | 0  |
| >>>>TFC 11   |                             | (TF0, TF0, TF0, TF2)   |
|  |                             |  |
| >>>>>ctfc  |                             | 40   |
| >>>>>gainFactorInformation   |                             | Computed   |
| >>>>>>referenceTFCld   |                             | 0  |
| >>>>TFC 12   |                             | (TF1, TF0, TF0, TF2)   |
| >>>>>ctfc  |                             | 41   |
|  |                             |  |
| >>>>>gainFactorInformation   |                             | Computed   |
| >>>>>referenceTFCld  |                             | 0  |
| >>>>TFC 13   |                             | (TF0, TF0, TF0, TF3)   |
| >>>>>ctfc  |                             | 60   |
| >>>> sgainFactorInformation  |                             | Computed   |
|  |                             | <u> </u>   |
| >>>>>referenceTFCId  |                             | 0  |
|  |                             |  |
| >>>>TFC 14   |                             | (TF1, TF0, TF0, TF3)   |
|  |                             | (TF1, TF0, TF0, TF3)   |
| >>>>TFC 14 >>>>>ctfc   |                             | 61   |
| >>>>>TFC 14 >>>>>ctfc >>>>>gainFactorInformation   |                             | 61<br>Computed   |
| >>>>>TFC 14 >>>>>ctfc >>>>>gainFactorInformation >>>>>referenceTFCId   |                             | 61<br>Computed<br>0  |
| >>>>>TFC 14 >>>>>ctfc >>>>>sgainFactorInformation >>>>>referenceTFCId >>>>>TFC 15  |                             | 61<br>Computed<br>0<br>(TF0, TF0, TF0, TF4)  |
| >>>>>TFC 14 >>>>>ctfc >>>>>gainFactorInformation >>>>>referenceTFCId   |                             | 61<br>Computed<br>0  |
| >>>>>TFC 14 >>>>>ctfc >>>>>painFactorInformation >>>>>referenceTFCId >>>>>TFC 15 >>>>>ctfc   |                             | 61<br>Computed<br>0<br>(TF0, TF0, TF0, TF4)<br>80  |
| >>>>>TFC 14 >>>>>ctfc >>>>>sgainFactorInformation >>>>>TFC 15 >>>>>ctfc >>>>>>TFC 15 >>>>>ctfc   |                             | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed   |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>FerenceTFCId >>>>>ctfc >>>>>>TFC 15 >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>>ctfc  |                             | 61<br>Computed<br>0<br>(TF0, TF0, TF0, TF4)<br>80  |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>FerenceTFCId >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc  |                             | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0   |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>FerenceTFCId >>>>>ctfc >>>>>>TFC 15 >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>>ctfc  | Same as UL                  | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed   |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>referenceTFCId >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc  | Same as UL                  | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0   |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>referenceTFCId >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc  | Same as UL                  | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0   |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>referenceTFCId >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc   >>>>>ctfc   >>>>>referenceTFCId   >>>>>ctfc   >>>>>ctfc   >>>>>sreferenceTFCId   | Same as UL                  | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>referenceTFCId >>>>>>tfc 15 >>>>>ctfc >>>>>>ctfc >>>>>>ctfc >>>>>>ctfc >>>>>>ctfc >>>>>>>ctfc >>>>>>ctfc >>>>>>ctfc >>>>>>ctfc >>>>>>>ctfc >>>>>>ctfc >>>>>>ctfc >>>>>>>ctfc >>>>>>ctfc >>>>>>>ctfc >>>>>>ctfc >>>>>>>>>ctfc >>>>>>>ctfc >>>>>>>>>> | Same as UL                  | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>referenceTFCId >>>>>>tfc  >>>>>>>>>tfc   | Same as UL                  | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  1 FALSE   |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>TFC 15 >>>>>ctfc  >>>>>ctfco-BinalingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset  | Same as UL                  | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>referenceTFCId >>>>>>tfc >>>>>ctfc >>>>>>tfc >>>>>>tfc >>>>>>tfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>tfc dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only)   | Same as UL                  | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  1 FALSE   |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>ctfc >>>>>>gainFactorInformation >>>>>TFC 15 >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>>ctfc >>>>>>ctfc  dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset PhyCH INFORMATION FDD   | Same as UL                  | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  1 FALSE   |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>ctfc >>>>>>gainFactorInformation >>>>>TFC 15 >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>>ctfc  dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset PhyCH INFORMATION FDD UL-DPCH-InfoPredef   | Same as UL                  | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  1 FALSE   |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>TFC 15 >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset PhyCH INFORMATION FDD UL-DPCH-InfoPredef >ul-DPCH-PowerControlInfo  |                             | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  1 FALSE Absent, not required                        |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>referenceTFCId >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset PhyCH INFORMATION FDD UL-DPCH-InfoPredef >ul-DPCH-PowerControlInfo >>powerControlAlgorithm  | Algorithm 1                 | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL 1 FALSE Absent, not required Algorithm 1             |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>TFC 15 >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset PhyCH INFORMATION FDD UL-DPCH-InfoPredef >ul-DPCH-PowerControlInfo  |                             | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  1 FALSE Absent, not required                        |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>referenceTFCId >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset PhyCH INFORMATION FDD UL-DPCH-InfoPredef >ul-DPCH-PowerControlInfo >>powerControlAlgorithm  | Algorithm 1<br>1 dB         | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL 1 FALSE Absent, not required  Algorithm 1 1 dB       |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>TFC 15 >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset PhyCH INFORMATION FDD UL-DPCH-InfoPredef >ul-DPCH-PowerControlInfo >>powerControlAlgorithm >>>tpcStepSize >tfci-Existence  | Algorithm 1<br>1 dB<br>TRUE | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  1 FALSE Absent, not required  Algorithm 1 1 dB TRUE |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>tfc 15 >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset PhyCH INFORMATION FDD UL-DPCH-InfoPredef >ul-DPCH-PowerControlInfo >>powerControlAlgorithm >>>tfci-Existence >puncturingLimit   | Algorithm 1<br>1 dB         | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL 1 FALSE Absent, not required  Algorithm 1 1 dB       |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>tfc 15 >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset PhyCH INFORMATION FDD UL-DPCH-InfoPredef >ul-DPCH-PowerControlInfo >>powerControlAlgorithm >>>tfci-Existence >puncturingLimit DL-CommonInformationPredef  | Algorithm 1<br>1 dB<br>TRUE | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  1 FALSE Absent, not required  Algorithm 1 1 dB TRUE |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>referenceTFCId >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset PhyCH INFORMATION FDD UL-DPCH-InfoPredef >ul-DPCH-PowerControlInfo >>powerControlAlgorithm >>>tfci-Existence >puncturingLimit DL-CommonInformationPredef >dl-DPCH-InfoCommon   | Algorithm 1 1 dB TRUE 0.88  | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  1 FALSE Absent, not required  Algorithm 1 1 dB TRUE |
| >>>>>TFC 14 >>>>>>ctfc >>>>>>ctfc >>>>>>gainFactorInformation >>>>>>tfc 15 >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>ctfc >>>>>referenceTFCId dl-CommonTransChInfo >tfcs-SignallingMode ul-CommonTransChInfo >tfcs-ID (TDD only) >sharedChannelIndicator (TDD only) >tfc-Subset PhyCH INFORMATION FDD UL-DPCH-InfoPredef >ul-DPCH-PowerControlInfo >>powerControlAlgorithm >>>tfci-Existence >puncturingLimit DL-CommonInformationPredef  | Algorithm 1<br>1 dB<br>TRUE | 61 Computed 0 (TF0, TF0, TF0, TF4) 80 Computed 0 Same as UL  1 FALSE Absent, not required  Algorithm 1 1 dB TRUE |

| >>tfci-Existence                | TRUE     | TRUE     |
|---------------------------------|----------|----------|
| >>pilotBits                     | 8        | 4        |
| >>positionFixed                 | Flexible | Flexible |
| PhyCH INFORMATION 3.84 Mcps     |          |          |
| TDD                             |          |          |
| UL-DPCH-InfoPredef              |          |          |
| >ul-DPCH-PowerControlInfo       |          |          |
| >>dpch-ConstantValue            |          |          |
| >commonTimeslotInfo             |          |          |
| >>secondInterleavingMode        |          |          |
| >>tfci-Coding                   |          |          |
| >>puncturingLimit               |          |          |
| >>repetitionPeriodAndLength     |          |          |
| DL-CommonInformationPredef      |          |          |
| >dl-DPCH-InfoCommon             |          |          |
| >>commonTimeslotInfo            |          |          |
| >>>secondInterleavingMode       |          |          |
| >>>tfci-Coding                  |          |          |
| >>>puncturingLimit              |          |          |
| >>>repetitionPeriodAndLength    |          |          |
| PhyCH INFORMATION 1.28 Mcps TDD |          |          |
| UL-DPCH-InfoPredef              |          |          |
| >commonTimeslotInfo             |          |          |
| >>secondInterleavingMode        |          |          |
| >>tfci-Coding                   |          |          |
| >>puncturingLimit               |          |          |
| >>repetitionPeriodAndLength     |          |          |
| DL-CommonInformationPredef      |          |          |
| >dl-DPCH-InfoCommon             |          |          |
| >>commonTimeslotInfo            |          |          |
| >>>secondInterleavingMode       |          |          |
| >>>tfci-Coding                  |          |          |
| >>>puncturingLimit              |          |          |
| >>>repetitionPeriodAndLength    |          |          |

| 0 0 0                   | 40.011             |
|-------------------------|--------------------|
| Configuration           | 13.6 kbps          |
|                         | signalling         |
| Ref 34.108              | 3                  |
| Default configuration   | 22                 |
| identity                |                    |
| RB INFORMATION          |                    |
| rb-Identity             | RB1: 1, RB2: 2,    |
| ·                       | RB3: 3             |
|                         |                    |
| rlc-InfoChoice          | RIc-info           |
| >ul-RLC-Mode            | RB1: UM            |
|                         | RB2- RB3: AM       |
| >>transmissionRLC-      | RB1: N/A           |
| DiscardMode             | RB2- RB3:          |
|                         | NoDiscard          |
| >>>maxDat               | RB1: N/A           |
|                         | RB2- RB3: 25       |
| >>transmissionWindowSiz | RB1: N/A           |
| е                       | RB2- RB3: 32       |
| >>timerRST              | RB1: N/A           |
|                         | RB2- RB3: 200      |
| >>max-RST               | RB1: N/A           |
|                         | RB2- RB3: 1        |
| >>pollingInfo           | RB1: N/A           |
|                         | RB2- RB3: as below |
| >>>TimerPoll            | RB2- RB3: 100      |
| >>>PolIPDU              | RB2- RB3: n/a      |
| >>>PollSDU              | RB2- RB3: 1        |

| Configuration  | 13.6 kbps  |
|--|--|
| lostTronomicsionDDU  | signalling<br>RB2- RB3: FALSE  |
| >>>lastTransmissionPDU-<br>Poll  |  |
| >>>lastRetransmissionPD<br>U-Poll  | RB2- RB3: TRUE   |
| >>>PollWindow  | RB2- RB3: 99   |
| >>segmentationIndication   | RB1- RB3: N/A  |
| >dl-RLC-Mode   | RB1: UM  |
| >ui-RLC-iviode   |  |
| . 0  | RB2- RB3: AM   |
| >>inSequenceDelivery   | RB1: N/A<br>RB2- RB3: TRUE   |
| >>receivingWindowSize  | RB1: N/A<br>RB2- RB3: 32   |
| >>dl-RLC-StatusInfo  | RB1: N/A   |
| Zar KEO Glatasiino   | RB2- RB3: as below   |
| >>>timerStatusProhibit   | RB2- RB3: 100  |
|  |  |
| >>>missingPDU-Indicator  | RB2- RB3: TRUE   |
| >>segmentationIndication   | RB1- RB3: N/A  |
| rb-MappingInfo   |  |
| >UL-<br>LogicalChannelMappings   | OneLogicalChannel  |
| >>ul-  | Dch  |
| TransportChannelType   |  |
| >>>transportChannelIdentit   | RB1- RB3:9   |
| >>logicalChannelIdentity   | RB1: 1, RB2: 2,  |
| ·····  | RB3: 3   |
| >>rlc-SizeList   | RB1- RB3:  |
| ZINC GIZCEIST  | configured   |
| >> maa   | RB1: 1, RB2: 2,  |
| >>mac-   |  |
| LogicalChannelPriority   | RB3: 3   |
| >DL-   |  |
| logicalChannelMappingList  | 0  |
| >>Mapping option 1   | One mapping option   |
| >>>dl-   | Dch  |
|  |  |
| TransportChannelType   |  |
| >>>>transportChannellden   | RB1- RB3: 9  |
| >>>transportChannellden tity   |  |
| >>>>transportChannellden   | RB1: 1, RB2: 2,  |
| >>>>transportChannelIden tity >>>logicalChannelIdentity  |  |
| >>>transportChannellden tity   | RB1: 1, RB2: 2,  |
| >>>transportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL-  | RB1: 1, RB2: 2,  |
| >>>transportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList   | RB1: 1, RB2: 2,<br>RB3: 3  |
| >>>transportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type  | RB1: 1, RB2: 2,<br>RB3: 3  |
| >>>transportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type  | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9   |
| >>>transportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel   | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT  |
| >>>transportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9   |
| >>>transportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet >>dynamicTF-information  | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS   |
| >>>transportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)   |
| >>>transportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet >>dynamicTF-information  | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)  BitMode  |
| >>>transportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >>dynamicTF-information >>>tf0/tf0,1  | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)   |
| >>>stransportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >>dynamicTF-information >>>tf0/tf0,1 >>>>rlcSize   | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)  BitMode  TrCH1: type 2,<br>part1= 2, part2= 0                                |
| >>>stransportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >>dynamicTF-information >>>tf0/ tf0,1  >>>>rlcSize >>>>sizeType  | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)  BitMode  TrCH1: type 2,<br>part1= 2, part2= 0 (144)                          |
| >>>stransportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH  UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >>dynamicTF-information >>>tf0/ tf0,1  >>>>rlcSize >>>>sizeType  >>>numberOfTbSizeList  | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)  BitMode  TrCH1: type 2,<br>part1= 2, part2= 0<br>(144)  TrCH1: Zero, one     |
| >>>stransportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH  UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >>dynamicTF-information >>>tf0/ tf0,1  >>>>rlcSize >>>>sizeType  >>>logicalChannelList  | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)  BitMode  TrCH1: type 2,<br>part1= 2, part2= 0<br>(144)  TrCH1: Zero, one All |
| >>>stransportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH  UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >>dynamicTF-information >>>tf0/ tf0,1  >>>srlcSize >>>>sizeType  >>>logicalChannelList >>>t1  | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)  BitMode  TrCH1: type 2,<br>part1= 2, part2= 0<br>(144)  TrCH1: Zero, one     |
| >>>stransportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH  UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >>dynamicTF-information >>>tf0/ tf0,1  >>>>rlcSize >>>>sizeType  >>>logicalChannelList >>>t1 >>>t1 >>>numberOfTbSizeList >>>t1 >>>numberOfTransportBI       | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)  BitMode  TrCH1: type 2,<br>part1= 2, part2= 0<br>(144)  TrCH1: Zero, one All |
| >>>stransportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >>dynamicTF-information >>>tf0/ tf0,1  >>>srlcSize >>>>sizeType  >>>logicalChannelList >>>t1 >>>t1 >>>numberOfTransportBl ocks                               | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)  BitMode  TrCH1: type 2,<br>part1= 2, part2= 0<br>(144)  TrCH1: Zero, one All |
| >>>stransportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >>dynamicTF-information >>>tf0/ tf0,1  >>>srlcSize >>>>sizeType  >>>logicalChannelList >>>t1 >>>t1 >>>srlcSize >>>>logicalChannelList >>>t1 >>>t1 >>>rlcSize | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)  BitMode  TrCH1: type 2,<br>part1= 2, part2= 0<br>(144)  TrCH1: Zero, one All |
| >>>stransportChannelIden tity >>>logicalChannelIdentity  TrCH INFORMATION PER TrCH UL- AddReconfTransChInfoList >Uplink transport channel type >transportChannelIdentity >transportFormatSet  >>dynamicTF-information >>>tf0/ tf0,1  >>>srlcSize >>>>sizeType  >>>logicalChannelList >>>t1 >>>t1 >>>numberOfTransportBl ocks                               | RB1: 1, RB2: 2,<br>RB3: 3  Dch  TrCH1: 9  DedicatedTransChT FS  TrCH1: (0x144,<br>1x144)  BitMode  TrCH1: type 2,<br>part1= 2, part2= 0<br>(144)  TrCH1: Zero, one All |

| Configuration                              | 13.6 kbps<br>signalling   |
|--|---------------------------|
| >>>>logicalChannelList                     |                           |
| >>>tf 2                                    | N/A                       |
| >>>>numberOfTransportBl                    |                           |
| ocks                                       |                           |
| >>>rlc-Size                                |                           |
| >>>>sizeType >>>numberOfTbSizeList         |                           |
| >>>logicalChannelList                      |                           |
| >>semistaticTF-Information                 |                           |
| >>>tti                                     | TrCH1: 10                 |
| >>>channelCodingType                       | Convolutional             |
| >>>codingRate                              | TrCH1: Third              |
| >>>rateMatchingAttribute                   | TrCH1: 160                |
| >>>crc-Size                                | TrCH1: 16                 |
| DL-  |                           |
| AddReconfTransChInfoList                   |                           |
| >Downlink transport                        | Dch                       |
| channel type                               |                           |
| >dl-                                       | TrCH1: 9                  |
| TransportChannelIdentity                   |                           |
| (should be as for UL)                      | 0                         |
| >tfs-SignallingMode                        | SameAsUL                  |
| >>transportFormatSet                       |                           |
| >>>dynamicTF-information<br>>>>>tf0/ tf0,1 |                           |
| >>>>rlcSize                                |                           |
| >>>>sizeType                               |                           |
| >>>numberOfTbSizeList                      |                           |
| >>>logicalChannelList                      |                           |
| >>ULTrCH-Id                                | TrCH1: 9                  |
| >dch-QualityTarget                         | 11011110                  |
| >>bler-QualityValue                        | TrCH1: 1x10 <sup>-2</sup> |
| TrCH INFORMATION,                          | TICHT: TXTU               |
| COMMON                                     |                           |
| ul-CommonTransChInfo                       |                           |
| >tfcs-ID (TDD only)                        | 1                         |
| >sharedChannelIndicator                    | FALSE                     |
| (TDD only)                                 |                           |
| >tfc-Subset                                | Absent, not required      |
| >ul-TFCS                                   | Normal TFCI               |
|  | signalling                |
| >>explicitTFCS-                            | Complete                  |
| ConfigurationMode                          |                           |
| >>>ctfcSize                                | Ctfc2Bit                  |
| >>>TFCS representation                     | Addition                  |
| >>>>TFCS list                              | (TEO)                     |
| >>>>TFCS 1                                 | (TF0)                     |
| >>>>>>CtfC                                 | 0<br>Computed             |
| >>>>>gainFactorInform ation                | Computed                  |
| >>>>>>referenceTFCId                       | 0                         |
| >>>>TFCS 2                                 | (TF1)                     |
| >>>>>ctfc                                  | 1                         |
| >>>>>gainFactorInform                      | Signalled                 |
| ation                                      | J == -=                   |
| >>>>>βc (FDD only)                         | 11                        |
| >>>>>βd                                    | 15                        |
| >>>>>>referenceTFCld                       | 0                         |
| dl-CommonTransChInfo                       |                           |
| >tfcs-SignallingMode                       | Same as UL                |
| PhyCH INFORMATION                          | 230 40 02                 |
| FDD  |                           |
|  |                           |

| Configuration                               | 13.6 kbps         |
|---|-------------------|
| UL-DPCH-InfoPredef                          | signalling        |
| >ul-DPCH-                                   |                   |
| PowerControlInfo                            |                   |
| >>powerControlAlgorithm                     | Algorithm 1       |
| >>>tpcStepSize                              | 1 dB              |
| >tfci-Existence                             | TRUE              |
| >puncturingLimit                            | 1                 |
| DL-   |                   |
| CommonInformationPredef                     |                   |
| >dl-DPCH-InfoCommon                         |                   |
| >>spreadingFactor                           | 128               |
| >>tfci-Existence                            | FALSE             |
| >>pilotBits                                 | 4                 |
| >>positionFixed                             | N/A               |
| 51 011111111111111111111111111111111111     |                   |
| PhyCH INFORMATION                           |                   |
| 3.84 / 7.68 Mcps TDD                        |                   |
| UL-DPCH-InfoPredef >ul-DPCH-                |                   |
| PowerControlInfo                            |                   |
| >>dpch-ConstantValue                        | 0                 |
| >commonTimeslotInfo                         | 0                 |
| >>secondInterleavingMode                    | frameRelated      |
| >>tfci-Coding                               | 4                 |
| >>puncturingLimit                           | 0.92              |
| >>repetitionPeriodAndLeng                   | repetitionPeriod1 |
| th  | '                 |
| DL-   |                   |
| CommonInformationPredef                     |                   |
| >dl-DPCH-InfoCommon                         |                   |
| >>commonTimeslotInfo                        |                   |
| >>>secondInterleavingMod                    | frameRelated      |
| e   | 4                 |
| >>>tfci-Coding                              | 4                 |
| >>>puncturingLimit >>>repetitionPeriodAndLe | 0.92              |
| ngth  | repetitionPeriod1 |
| PhyCH INFORMATION                           |                   |
| 1.28 Mcps TDD                               |                   |
| UL-DPCH-InfoPredef                          |                   |
| >commonTimeslotInfo                         |                   |
| >>secondInterleavingMode                    | frameRelated      |
| >>tfci-Coding                               | 4                 |
| >>puncturingLimit                           | 0.64              |
| >>repetitionPeriodAndLeng                   | repetitionPeriod1 |
| th  |                   |
| DL-   |                   |
| CommonInformationPredef                     |                   |
| >dl-DPCH-InfoCommon                         |                   |
| >>commonTimeslotInfo                        | forma D. I. ()    |
| >>>secondInterleavingMod                    | frameRelated      |
| e<br>>>>tfci-Coding                         | 4                 |
|   | 0.64              |
| >>>puncturingLimit >>>repetitionPeriodAndLe | repetitionPeriod1 |
| ngth  | Topennom enour    |
| L 3   | <b>L</b>          |

NOTE: the difference between default configuration #22 and default configuration #1 (13.6 kbps signalling) resides in the RLC configuration and the DCH quality target.

## 14 Specific functions

## 14.1 Intra-frequency measurements

## 14.1.1 Intra-frequency measurement quantities

A measurement quantity is used to evaluate whether an intra-frequency event has occurred or not. It can be:

- 1 Downlink E<sub>c</sub>/N<sub>0</sub>.
- 2 Downlink path loss.

#### For FDD:

Pathloss in dB = Primary CPICH Tx power - CPICH RSCP.

For Primary CPICH Tx power the IE "Primary CPICH Tx power" shall be used. The unit is dBm.

CPICH RSCP is the result of the CPICH RSCP measurement. The unit is dBm.

#### For TDD:

Pathloss in dB = Primary CCPCH TX power - Primary CCPCH RSCP.

For Primary CCPCH TX power the IE "Primary CCPCH TX Power" shall be used. The unit is dBm.

Primary CCPCH RSCP is the result of the Primary CCPCH RSCP measurement. The unit is dBm.

If necessary Pathloss shall be rounded up to the next higher integer.

Results higher than 158 shall be reported as 158.

Results lower than 46 shall be reported as 46.

- 3 Downlink received signal code power (RSCP) after despreading.
- 4 ISCP measured on Timeslot basis.

A description of those values can be found in [7] and [8].

## 14.1.2 Intra-frequency reporting events for FDD

Within the measurement reporting criteria field in the Measurement Control message the UTRAN notifies the UE which events should trigger a measurement report. The listed events are the toolbox from which the UTRAN can choose the reporting events that are needed for the implemented handover evaluation function, or other radio network functions.

All the specified events are measured with respect to any of the measurement quantities given in subclause 14.1.1. The measurement quantities are measured on the monitored primary common pilot channels (CPICH) of the cell defined in the measurement object.

Special mechanisms for the events are illustrated in subclause 14.1.4 and 14.1.5.

NOTE: The events below are numbered 1A, 1B, 1C,... since all intra-frequency reporting events would be labelled 1X, inter-frequency reporting events would be labelled 2X, and so on for the other measurement types.

When one intra-frequency measurement identity corresponds to multiple intra-frequency events with identical event identities, the UE behaviour is not specified.

### 14.1.2.1 Reporting event 1A: A Primary CPICH enters the reporting range

When an intra-frequency measurement configuring event 1a is set up, the UE shall:

- 1> create a variable TRIGGERED\_1A\_EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 1A is configured in the UE, the UE shall:

- 1> if "Measurement quantity" is "pathloss" and Equation 1 below is fulfilled for one or more primary CPICHs, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 2 below is fulfilled for one or more primary CPICHs, for each of these primary CPICHs:
  - 2> if all required reporting quantities are available for that cell; and
  - 2> if the equations have been fulfilled for a time period indicated by "Time to trigger", and if that primary CPICH is part of cells allowed to trigger the event according to "Triggering condition 2", and if that primary CPICH is not included in the "cells triggered" in the variable TRIGGERED\_1A\_EVENT:
    - 3> include that primary CPICH in the "cells recently triggered" in the variable TRIGGERED\_1A\_EVENT.
- 1> if the value of "Reporting deactivations threshold" for this event is greater than or equal to the current number of cells in the active set or equal to 0 and any primary CPICHs are stored in the "cells recently triggered" in the variable TRIGGERED\_1A\_EVENT:
  - 2> if "Reporting interval" for this event is not equal to 0:
    - 3> if the IE "Periodical reporting running" in the variable TRIGGERED\_1A\_EVENT is set to FALSE:
      - 4> start a timer with the value of "Reporting interval" for this event and set the IE "Periodical reporting running" in the variable TRIGGERED\_1A\_EVENT to TRUE;
    - 3> set "sent reports" for the primary CPICHs in "cells recently triggered" in the variable TRIGGERED\_1A\_EVENT to 1.
  - 2> send a measurement report with IEs set as below:
    - 3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1a"; and
    - 3> include in "cell measurement event results" all entries of the "cells recently triggered" in the variable TRIGGERED\_1A\_EVENT in descending order according to the configured measurement quantity taking into account the cell individual offset for each of those cells;
    - 3> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
  - 2> move all entries from "cells recently triggered" to "cells triggered" in the variable TRIGGERED 1A EVENT.
- 1> if the timer for the periodical reporting has expired:
  - 2> if any primary CPICH is included in the "cells triggered" in the variable TRIGGERED\_1A\_EVENT:
    - 3> if "Reporting interval" for this event is not equal to 0, and if "Amount of reporting" is greater than "sent reports" stored for any of these primary CPICHs, in "cells triggered" in the variable TRIGGERED\_1A\_EVENT:
      - 4> increment the stored counter "sent reports" for all CPICHs in "cell triggered" in variable TRIGGERED\_1A\_EVENT;
      - 4> start a timer with the value of "Reporting interval" for this event;
      - 4> send a measurement report with IEs set as below:
        - 5> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1a"; and
        - 5> include in "cell measurement event results" all entries of the variable TRIGGERED\_1A\_EVENT with value of IE "sent reports" equal to or smaller than value of "Amount of reporting" in descending order according to the configured measurement quantity taking into account the cell individual offset for each of those cells;

- 5> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
- 4> if "sent reports" in variable TRIGGERED\_1A\_EVENT is equal to "Amount of reporting" for all entries:
  - 5> set the IE "Periodical Reporting running" in the variable TRIGGERED\_1A\_EVENT to FALSE and disable the timer for the periodical reporting.
- 1> if "Measurement quantity" is "pathloss" and Equation 3 below is fulfilled for a primary CPICH, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 4 below is fulfilled for a primary CPICH; or
- 1> if a primary CPICH is no longer part of the cells allowed to trigger the event according to the "Triggering condition 2":
  - 2> if that primary CPICH is included in the "cells triggered" or "cells recently triggered" in the variable TRIGGERED\_1A\_EVENT:
    - 3> remove the entry of that primary CPICH from "cells triggered" or "cells recently triggered" in the variable TRIGGERED\_1A\_EVENT.
    - 3> if no entry in the variable TRIGGERED\_1A\_EVENT has a value of "sent reports" smaller than "Amount of reporting"; or
    - 3> if there is no entry in the variable TRIGGERED\_1A\_EVENT:
      - 4> if the reporting interval timer is running:
        - 5> stop the reporting interval timer;
        - 5> set the IE "Periodical reporting running" in the variable TRIGGERED\_1A\_EVENT to FALSE.

This event is only applicable to the CELL\_DCH state. When the measurement is setup in CELL\_DCH or upon transition to CELL\_DCH the UE shall:

- 1> if the "Triggering condition 2" includes active set cells:
  - 2> include the primary CPICH of all cells in the current active set into the "cells triggered" in the variable TRIGGERED\_1A\_EVENT with the counter "sent reports" set to "Amount of reporting".

Equation 1 (Triggering condition for pathloss)

$$10 \cdot LogM_{New} + CIO_{New} \leq W \cdot 10 \cdot Log\left(1 / \sum_{i=1}^{N_A} (1 / M_i)\right) + (1 - W) \cdot 10 \cdot LogM_{Best} + (R_{1a} - H_{1a} / 2),$$

Equation 2 (Triggering condition for all the other measurement quantities)

$$10 \cdot Log M_{New} + CIO_{New} \ge W \cdot 10 \cdot Log \left( \sum_{i=1}^{N_A} M_i \right) + (1 - W) \cdot 10 \cdot Log M_{Best} - (R_{1a} - H_{1a}/2),$$

Equation 3 (Leaving triggering condition for pathloss)

$$10 \cdot Log M_{New} + CIO_{New} > W \cdot 10 \cdot Log \left( 1 / \sum_{i=1}^{N_A} (1/M_i) \right) + (1-W) \cdot 10 \cdot Log M_{Best} + (R_{1a} + H_{1a} / 2),$$

Equation 4 (Leaving triggering condition for all the other measurement quantities)

$$10 \cdot Log M_{New} + CIO_{New} < W \cdot 10 \cdot Log \left( \sum_{i=1}^{N_A} M_i \right) + (1 - W) \cdot 10 \cdot Log M_{Best} - (R_{1a} + H_{1a}/2),$$

The variables in the formula are defined as follows:

 $M_{New}$  is the measurement result of the cell entering the reporting range.

 $CIO_{New}$  is the individual cell offset for the cell entering the reporting range if an individual cell offset is stored for that cell. Otherwise it is equal to 0.

 $M_i$  is a measurement result of a cell not forbidden to affect reporting range in the active set.

 $N_A$  is the number of cells not forbidden to affect reporting range in the current active set.

For pathloss

 $M_{Best}$  is the measurement result of the cell not forbidden to affect reporting range in the active set with the lowest measurement result, not taking into account any cell individual offset.

for other measurements quantities.

 $M_{Best}$  is the measurement result of the cell not forbidden to affect reporting range in the active set with the highest measurement result, not taking into account any cell individual offset.

W is a parameter sent from UTRAN to UE.

 $R_{1a}$  is the reporting range constant.

 $H_{1a}$  is the hysteresis parameter for the event 1a.

If the measurement results are pathloss or CPICH-Ec/No then  $M_{New}$ ,  $M_i$  and  $M_{Best}$  are expressed as ratios.

If the measurement result is CPICH-RSCP then  $M_{New}$ ,  $M_i$  and  $M_{Best}$  are expressed in mW.

## 14.1.2.2 Reporting event 1B: A primary CPICH leaves the reporting range

When an intra-frequency measurement configuring event 1b is set up, the UE shall:

- 1> create a variable TRIGGERED\_1B\_EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 1B is configures in the UE, the UE shall:

- 1> if "Measurement quantity" is "pathloss" and Equation 1 below is fulfilled for one or more primary CPICHs, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 2 below is fulfilled for one or more primary CPICHs, for each of these primary CPICHs:
  - 2> if all required reporting quantities are available for that cell, and if the equations have been fulfilled for a time period indicated by "Time to trigger", and if that primary CPICH is part of cells allowed to trigger the event according to "Triggering condition 1", and if that primary CPICH is not included in the "cells triggered" in the variable TRIGGERED\_1B\_EVENT:
    - 3> include that primary CPICH in the "cells recently triggered" in the variable TRIGGERED 1B EVENT.
- 1> if any primary CPICHs are stored in the "cells recently triggered" in the variable TRIGGERED 1B EVENT:
  - 2> if "Periodic reporting info-1b" is present, and "Reporting interval" for this event is not equal to 0:
    - 3> if the IE "Periodical reporting running" in the variable TRIGGERED\_1B\_EVENT is set to FALSE:
      - 4> start a timer with the value of "Reporting interval" for this event and set the IE "Periodical reporting running" in the variable TRIGGERED\_1B\_EVENT to TRUE;
    - 3> set "sent reports" for the primary CPICHs in "cells recently triggered" in the variable TRIGGERED\_1B\_EVENT to 1.
  - 2> send a measurement report with IEs set as below:
    - 3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1b"; and
    - 3> include in "cell measurement event results" all entries of "cells recently triggered" in the variable TRIGGERED\_1B\_EVENT in ascending order according to the configured measurement quantity taking into account the cell individual offset for each of those cells;

- 3> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
- 2> move all entries from IE "cells recently triggered" to "cells triggered" in the variable TRIGGERED\_1B\_EVENT.
- 1> if the timer for the periodical reporting has expired:
  - 2> if any primary CPICH is included in the "cells triggered" in the variable TRIGGERED\_1B\_EVENT:
    - 3> if "Periodic reporting info-1b" is present:
      - 4> if "Reporting interval" is not equal to 0, and if "Amount of reporting" is greater than "sent reports" stored for any of these primary CPICHs, in "cells triggered" in the variable TRIGGERED\_1B\_EVENT:
        - 5> increment the stored counter "sent reports" for all CPICHs in "cell triggered" in variable TRIGGERED\_1B\_EVENT;
        - 5> start a timer with the value of "Reporting interval-1b" for this event;
        - 5> send a measurement report with IEs set as below:
          - 6> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1b"; and
          - 6> include in "cell measurement event results" all entries of the variable TRIGGERED\_1B\_EVENT with value of IE "sent reports" equal to or smaller than value of "Amount of reporting" in ascending order according to the configured measurement quantity taking into account the cell individual offset for each of those cells;
          - 6> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
        - 5> if "sent reports" in variable TRIGGERED\_1B\_EVENT is equal to "Amount of reporting" for all entries:
          - 6> set the IE "Periodical Reporting running" in the variable TRIGGERED\_1B\_EVENT to FALSE and disable the timer for the periodical reporting.
- 1> if "Measurement quantity" is "pathloss" and Equation 3 below is fulfilled for a primary CPICH, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 4 below is fulfilled for a primary CPICH; or
- 1> if a primary CPICH is no longer part of the cells allowed to trigger the event according to the "Triggering condition 1":
  - 2> if that primary CPICH is included in the "cells triggered" in the variable TRIGGERED\_1B\_EVENT:
    - 3> remove the entry of that primary CPICH from "cells triggered" in the variable TRIGGERED\_1B\_EVENT;
    - 3> if there is no entry in the variable TRIGGERED\_1B\_EVENT:
      - 4> if the reporting interval timer is running:
        - 5> stop the reporting interval timer;
        - 5> set the IE "Periodical reporting running" in the variable TRIGGERED\_1B\_EVENT to FALSE.

Equation 1 (Triggering condition for pathloss)

$$10 \cdot LogM_{Old} + CIO_{Old} \ge W \cdot 10 \cdot Log \left( 1 / \sum_{i=1}^{N_A} (1/M_i) \right) + (1-W) \cdot 10 \cdot LogM_{Best} + (R_{1b} + H_{1b} / 2)$$
, Equation 2 (Triggering condition for all the other measurement quantities)

 $10 \cdot Log M_{Old} + CIO_{Old} \le W \cdot 10 \cdot Log \left(\sum_{i=1}^{N_A} M_i\right) + (1-W) \cdot 10 \cdot Log M_{Best} - (R_{1b} + H_{1b}/2)$ , Equation 3 (Leaving triggering condition for pathloss)

 $10 \cdot LogM_{old} + CIO_{old} < W \cdot 10 \cdot Log\left(1/\sum_{i=1}^{N_A} (1/M_i)\right) + (1-W) \cdot 10 \cdot LogM_{Best} + (R_{1b} - H_{1b} / 2)$ , Equation 4 (Leaving triggering condition for all the other measurement quantities)

$$10 \cdot Log M_{Old} + CIO_{Old} > W \cdot 10 \cdot Log \left(\sum_{i=1}^{N_A} M_i\right) + (1-W) \cdot 10 \cdot Log M_{Best} - (R_{1b} - H_{1b}/2)$$
, The variables in the formula are defined as follows:

 $M_{Old}$  is the measurement result of the cell leaving the reporting range.

*CIO*<sub>Old</sub> is the individual cell offset for the cell leaving the reporting range if an individual cell offset is stored for that cell. Otherwise it is equal to 0.

 $M_i$  is a measurement result of a cell not forbidden to affect reporting range in the active set.

 $N_A$  is the number of cells not forbidden to affect reporting range in the current active set.

For pathloss

 $M_{Best}$  is the measurement result of the cell not forbidden to affect reporting range in the active set with the lowest measurement result, not taking into account any cell individual offset.

for other measurements quantities.

 $M_{Best}$  is the measurement result of the cell not forbidden to affect reporting range in the active set with the highest measurement result, not taking into account any cell individual offset.

W is a parameter sent from UTRAN to UE.

 $R_{1b}$  is the reporting range constant.

 $H_{1b}$  is the hysteresis parameter for the event 1b.

If the measurement results are pathloss or CPICH-Ec/No then  $M_{Old}$ ,  $M_i$  and  $M_{Best}$  are expressed as ratios.

If the measurement result is CPICH-RSCP then  $M_{Old}$ ,  $M_i$  and  $M_{Best}$  are expressed in mW.

# 14.1.2.3 Reporting event 1C: A non-active primary CPICH becomes better than an active primary CPICH

When an intra-frequency measurement configuring event 1c is set up, the UE shall:

1> create a variable TRIGGERED\_1C\_EVENT related to that measurement, which shall initially be empty;

1> delete this variable when the measurement is released.

When event 1C is configured in the UE, the UE shall:

- 1> if "Measurement quantity" is "pathloss" and Equation 1 below is fulfilled for one or more primary CPICHs, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 2 below is fulfilled for one or more primary CPICHs, for each of these primary CPICHs:
  - 2> if all required reporting quantities are available for that cell; and
  - 2> if the equations have been fulfilled for a time period indicated by "Time to trigger", and if the primary CPICH that is better is not included in the active set but the other primary CPICH is any of the primary CPICHs included in the active set, and if that first primary CPICH is not included in the "cells triggered" in the variable TRIGGERED 1C EVENT:
    - 3> include that primary CPICH in the "cells recently triggered" in the variable TRIGGERED\_1C\_EVENT.

- 1> if the value of "Replacement activation threshold" for this event is less than or equal to the current number of cells in the active set or equal to 0 and if any primary CPICHs are stored in the "cells recently triggered" in the variable TRIGGERED\_1C\_EVENT:
  - 2> if "Reporting interval" for this event is not equal to 0:
    - 3> if the IE "Periodical reporting running" in the variable TRIGGERED\_1C\_EVENT is set to FALSE:
      - 4> start a timer for with the value of "Reporting interval" for this event and set the IE "Periodical reporting running" in the variable TRIGGERED\_1C\_EVENT to TRUE.
    - 3> set "sent reports" for that primary CPICH in the variable TRIGGERED\_1C\_EVENT to 1.
  - 2> send a measurement report with IEs set as below:
    - 3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1c"; and
    - 3> include in "cell measurement event results" all entries of the "cells recently triggered" in the variable TRIGGERED\_1C\_EVENT not in the active set as well as the "primary CPICH info" of all the primary CPICHs in the active set for which the measured value is worse (i.e. greater for pathloss and less for the other measurement quantities) than the one of the entry in "cell recently triggered" that has the best measured value taking into account their cell individual offset. The "primary CPICH info" for those cells shall be ordered according to their measured value taking into account their cell individual offset, beginning with the best cell to the worst one;
    - 3> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
  - 2> move all entries from "cells recently triggered" to "cells triggered" in the variable TRIGGERED\_1C\_EVENT.
- 1> if the timer for the periodical reporting has expired:
  - 2> if any primary CPICH is included in the "cells triggered" in the variable TRIGGERED\_1C\_EVENT, and not included in the current active set:
    - 3> if "Reporting interval" for this event is not equal to 0, and if "Amount of reporting" is greater than "sent reports" stored for that primary CPICH, in "cells triggered" in the variable TRIGGERED\_1C\_EVENT:
      - 4> increment the stored counter "sent reports" for all CPICH in "cell triggered" in variable TRIGGERED\_1C\_EVENT;
      - 4> start a timer with the value of "Reporting interval" for this event;
      - 4> send a measurement report with IEs set as below:
        - 5> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1c"; and
        - 5> include in "cell measurement event results" all entries of the variable TRIGGERED\_1C\_EVENT with value of IE "sent report" equal to or smaller than value of "Amount of reporting" and that are not part of the active set as well as the "primary CPICH info" of all the primary CPICHs in the active set for which the measured value is worse (i.e. greater for pathloss and less for the other measurement quantities) than the one of the entry in "cell triggered" that has the best measured value, ordering the "primary CPICH info" according to their measured value beginning with the best cell to the worst one, taking into account the cell individual offset for each cell;
        - 5> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
      - 4> if "sent reports" in variable TRIGGERED\_1C\_EVENT is equal to "Amount of reporting" for all entries:
        - 5> set the IE "Periodical Reporting running" in the variable TRIGGERED\_1C\_EVENT to FALSE and disable the timer for the periodical reporting.

- 1> if "Measurement quantity" is "pathloss" and Equation 3 below is fulfilled for a primary CPICH, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 4 below is fulfilled for a primary CPICH or;
- 1> if a primary CPICH is added to the active set:
  - 2> if that primary CPICH is included in the "cells triggered" or "cells recently triggered" in the variable TRIGGERED\_1C\_EVENT:
    - 3> remove the entry of that primary CPICH from "cells triggered" or "cells recently triggered" in the variable TRIGGERED 1C EVENT.
    - 3> if no entry in the variable TRIGGERED\_1C\_EVENT has a value of "sent reports" smaller than "Amount of reporting" or
    - 3> if there is no entry in the variable TRIGGERED\_1C\_EVENT:
      - 4> if the reporting interval timer is running:
        - 5> stop the reporting interval timer;
        - 5> set the IE "Periodical reporting running" in the variable TRIGGERED\_1C\_EVENT to FALSE.

Equation 1 (Triggering condition for pathloss)

$$10 Log M_{ew} + CIQ_{ew} \le 10 Log M_{eAS} + CIQ_{eAS} - H_{lc}/2$$

Equation 2 (Triggering condition for all the other measurement quantities)

$$10 Log M_{Pew} + CIQ_{Pew} \ge 10 Log M_{Pas} + CIQ_{Pas} + H_{lc}/2$$

Equation 3 (Leaving triggering condition for pathloss)

$$10 Log M_{ev} + CIQ_{ev} > 10 Log M_{AS} + CIQ_{AS} + H_{lc}/2$$

Equation 4 (Leaving triggering condition for all the other measurement quantities)

$$10 Log M_{ew} + CIQ_{ew} < 10 Log M_{eAS} + CIQ_{eAS} - H_{lc}/2$$

The variables in the formula are defined as follows:

 $M_{New}$  is the measurement result of the cell not included in the active set.

 $CIO_{New}$  is the individual cell offset for the cell becoming better than the cell in the active set if an individual cell offset is stored for that cell. Otherwise it is equal to 0.

For pathloss:

 $M_{InAS}$  is the measurement result of the cell in the active set with the highest measurement result.

For other measurement quantities:

 $M_{InAS}$  is the measurement result of the cell in the active set with the lowest measurement result.

CIO<sub>tnAS</sub> is the individual cell offset for the cell in the active set that is becoming worse than the new cell.

 $H_{1c}$  is the hysteresis parameter for the event 1c.

If the measurement results are pathloss or CPICH-Ec/No then  $M_{New}$  and  $M_{inAS}$  are expressed as ratios.

If the measurement result is CPICH-RSCP then  $M_{New}$  and  $M_{inAS}$  are expressed in mW.

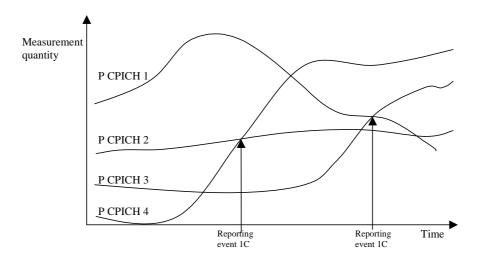


Figure 14.1.2.3-1 [Informative]: A primary CPICH that is not included in the active set becomes better than a primary CPICH that is in the active set

In this figure, the parameters hysteresis and time to trigger, as well as the cell individual offsets for all cells are equal to 0. In this example the cells belonging to primary CPICH 1 and 2 are in the active set, but the cells transmitting primary CPICH 3 and CPICH 4 are not (yet) in the active set.

The first measurement report is sent when primary CPICH 4 becomes better than primary CPICH 2. The "cell measurement event result" of the measurement report contains the information of primary CPICH 4 and CPICH 2.

Assuming that the active set has been updated after the first measurement report (active set is now primary CPICH 1 and primary CPICH 4), the second report is sent when primary CPICH 3 becomes better than primary CPICH 1. The "cell measurement event result" of the second measurement report contains the information of primary CPICH 3 and primary CPICH 1.

#### 14.1.2.4 Reporting event 1D: Change of best cell

When an intra-frequency measurement configuring event 1d is set up, the UE shall:

- 1> create a variable TRIGGERED\_1D\_EVENT related to that measurement, which shall initially contain the best cell in the active set when the measurement is initiated;
- 1> delete this variable when the measurement is released.
- 1> As soon as the best cell in the active set has been evaluated by the UE (and stored in the TRIGGERED\_1D\_EVENT variable) and provided that there is more than one cell in the active set, trigger an immediate measurement report with IEs set as below:
  - 2> set in "intra-frequency measurement event results"; "Intrafrequency event identity" to "1d" and "cell measurement event results" to the CPICH info of the primary CPICH stored in the TRIGGERED\_1D\_EVENT variable;
  - 2> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2

When event 1D is configured in the UE, the UE shall:

- 1> if IE "useCIO" is present and its value is TRUE, take into account the Cell Individual Offset for evaluation of the Equation 1 and 2, otherwise do not take it into account.
- 1> if "Measurement quantity" is "pathloss" and Equation 1 below is fulfilled for a primary CPICH that is not stored in "Best cell" in variable BEST\_CELL\_1D\_EVENT, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 2 below is fulfilled for a primary CPICH that is not stored in "Best cell" in variable BEST\_CELL\_1D\_EVENT:

NOTE: If the equations are simultaneously fulfilled for more than one primary CPICH, the UE should report only one event 1D, triggered by the best primary CPICH.

- 2> if all required reporting quantities are available for that cell, and if the equations have been fulfilled for a time period indicated by "Time to trigger" and if IE "Triggering condition 2" is absent or if it is present and that primary CPICH is part of cells allowed to trigger the event according to "Triggering condition 2":
  - 3> set "best cell" in the variable BEST\_CELL\_1D\_EVENT to that primary CPICH that triggered the event;
  - 3> send a measurement report with IEs set as below:
    - 4> set in "intra-frequency measurement event results"; "Intrafrequency event identity" to "1d" and "cell measurement event results" to the CPICH info of the primary CPICH that triggered the report.
    - 4> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2.

This event is only applicable to the CELL\_DCH state. Upon transition to CELL\_DCH the UE shall:

1> set "best cell" in the variable BEST\_CELL\_1D\_EVENT to the best cell of the primary CPICHs included in the active set.

Equation 1 (Triggering condition for pathloss)

$$10 Log M_{otBest} + CIQ_{otBest} \le 10 Log M_{est} + CIQ_{est} - H_{td}/2$$

Equation 2 (Triggering condition for all the other measurement quantities)

$$10 Log M_{totBest} + CIQ_{totBest} \ge 10 Log M_{test} + CIQ_{test} + H_{td}/2$$

The variables in the formula are defined as follows:

 $M_{NotBest}$  is the measurement result of a cell not stored in "best cell" in the variable BEST\_CELL\_1D\_EVENT.

CIO<sub>NotBest</sub> is the cell individual offset of a cell not stored in "best cell" in the variable BEST\_CELL\_1D\_EVENT.

 $M_{Best}$  is the measurement result of the cell stored in "best cell" in variable BEST\_CELL\_1D\_EVENT.

CIO<sub>Best</sub> is the cell individual offset of a cell stored in "best cell" in the variable BEST\_CELL\_1D\_EVENT.

 $H_{1d}$  is the hysteresis parameter for the event 1d.

If the measurement results are pathloss or CPICH-Ec/No then  $M_{Not Best}$  and  $M_{Best}$  are expressed as ratios.

If the measurement result is CPICH-RSCP then  $M_{Not Best}$  and  $M_{Best}$  are expressed in mW.

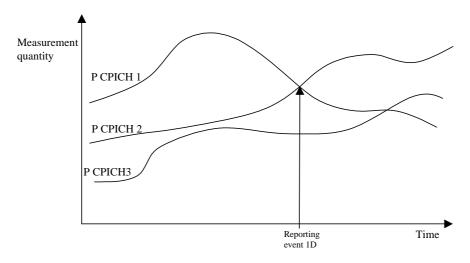


Figure 14.1.2.4-1 [Informative]: A primary CPICH becomes better than the previously best primary CPICH

In this figure, the parameters hysteresis and time to trigger, as well as the cell individual offsets for all cells are equal to 0.

# 14.1.2.5 Reporting event 1E: A Primary CPICH becomes better than an absolute threshold

When an intra-frequency measurement configuring event 1e is set up, the UE shall:

- 1> create a variable TRIGGERED\_1E\_EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 1E is configured in the UE, the UE shall:

- 1> if "Measurement quantity" is "pathloss" and Equation 1 below is fulfilled for a primary CPICH, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 2 below is fulfilled for one or more primary CPICHs, for each of these primary CPICHs:
  - 2> if all required reporting quantities are available for that cell, and if the equations have been fulfilled for a time period indicated by "Time to trigger", and if that primary CPICH is part of cells allowed to trigger the event according to "Triggering condition 2", and that primary CPICH is not included in the "cells triggered" in the variable TRIGGERED\_1E\_EVENT:
    - 3> include that primary CPICH in the "cells recently triggered" in the variable TRIGGERED\_1E\_EVENT.
- 1> if any primary CPICHs are stored in the "cells recently triggered" in the variable TRIGGERED\_1E\_EVENT:
  - 2> send a measurement report with IEs set as below:
    - 3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1e"; and
    - 3> include in "cell measurement event results" all entries of the "cells recently triggered" in the variable TRIGGERED\_1E\_EVENT in descending order according to the configured measurement quantity taking into account the cell individual offset for each of those cells;
    - 3> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
  - 2> move all entries from "cells recently triggered" to "cells triggered" in the variable TRIGGERED\_1E\_EVENT.
- 1> if "Measurement quantity" is "pathloss" and Equation 3 below is fulfilled for a primary CPICH, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 4 below is fulfilled for a primary CPICH; or
- 1> if a primary CPICH is no longer part of the cells allowed to trigger the event according to the "Triggering condition 2":
  - 2> if that primary CPICH is included in the "cells triggered" in the variable TRIGGERED\_1E\_EVENT:
    - 3> remove that primary CPICH and sent reports from "cells triggered" in the variable TRIGGERED\_1E\_EVENT.

This event is only applicable to the CELL\_DCH state. When the measurement is setup in CELL\_DCH or upon transition to CELL\_DCH the UE shall:

- 1> if the "Triggering condition 2" includes active set cells:
  - 2> include the primary CPICH of all cells in the current active set that fulfil the equations 1 or 2 according to the "Measurement quantity" of event 1e into the "cells triggered" in the variable TRIGGERED\_1E\_EVENT.

Equation 1 (Triggering condition for pathloss)

$$10 Log M_{ev} + CIQ_{ev} \leq T_{le} - H_{le}/2$$

Equation 2 (Triggering condition for all the other measurement quantities)

$$10 Log M_{ew} + CIQ_{ew} \ge T_{le} + H_{le}/2$$
,

Equation 3 (Leaving triggering condition for pathloss)

$$10 Log M_{ew} + CIQ_{ew} > T_{le} + H_{le}/2$$

Equation 4 (Leaving triggering condition for all the other measurement quantities)

$$10 Log M_{ev} + CIQ_{ev} < T_{le} - H_{le}/2$$

The variables in the formula are defined as follows:

 $M_{New}$  is the measurement result of a cell that becomes better than an absolute threshold.

 $CIO_{New}$  is the individual cell offset for the cell becoming better than the absolute threshold. Otherwise it is equal to 0.

 $T_{1e}$  is an absolute threshold.

 $H_{1e}$  is the hysteresis parameter for the event 1e.

If the measurement results are pathloss or CPICH-Ec/No then  $M_{New}$  is expressed as ratios.

If the measurement result is CPICH-RSCP then  $M_{New}$  is expressed in mW.

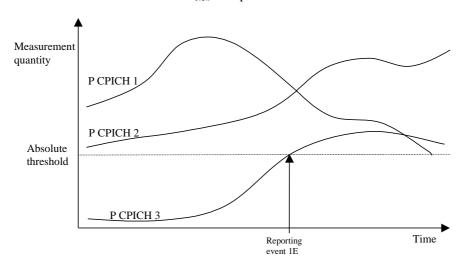


Figure 14.1.2.5-1 [Informative]: Event-triggered report when a Primary CPICH becomes better than an absolute threshold

In this figure, the parameters hysteresis and time to trigger, as well as the cell individual offsets for all cells are equal to 0.

# 14.1.2.6 Reporting event 1F: A Primary CPICH becomes worse than an absolute threshold

When an intra-frequency measurement configuring event 1F is set up, the UE shall:

- 1> create a variable TRIGGERED\_1F\_EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 1F is configured in the UE, the UE shall:

- 1> if "Measurement quantity" is "pathloss" and Equation 1 below is fulfilled for one or more primary CPICHs, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 2 below is fulfilled for one or more primary CPICHs, for each of these primary CPICHs:
  - 2> if all required reporting quantities are available for that cell, and if the equations have been fulfilled for a time period indicated by "Time to trigger", and if that primary CPICH is part of cells allowed to trigger the event

according to "Triggering condition 1", and that primary CPICH is not included in the "cells triggered" in the variable TRIGGERED\_1F\_EVENT:

- 3> include that primary CPICH in the "cells recently triggered" in the variable TRIGGERED\_1F\_EVENT.
- 1> if any primary CPICHs are stored in the "cells recently triggered" in the variable TRIGGERED\_1F\_EVENT:
  - 2> send a measurement report with IEs set as below:
    - 3> set in "intra-frequency event measurement results": "Intrafrequency event identity" to "1f"; and
    - 3> include in "cell measurement event results" all entries of the "cells recently triggered" in the variable TRIGGERED\_1F\_EVENT in descending order according to the configured measurement quantity taking into account the cell individual offset for each of those cells;
    - 3> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell;
  - 2> move all entries from "cells recently triggered" to "cells triggered" in the variable TRIGGERED\_1F\_EVENT.
- 1> if "Measurement quantity" is "pathloss" and Equation 3 below is fulfilled for a primary CPICH, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 4 below is fulfilled for a primary CPICH; or
- 1> if a primary CPICH is no longer part of the cells allowed to trigger the event according to the "Triggering condition 1":
  - 2> if that primary CPICH is included in the "cells triggered" in the variable TRIGGERED\_1F\_EVENT:
    - 3> remove that primary CPICH from "cells triggered" in the variable TRIGGERED\_1F\_EVENT.

Equation 1 (Triggering condition for pathloss)

$$10 Log M_{ld} + CIQ_{ld} \ge T_{lf} + H_{lf}/2$$

Equation 2 (Triggering condition for all the other measurement quantities)

$$10 Log M_{ld} + CI Q_{ld} \leq T_{1f} - H_{1f}/2$$
,

Equation 3 (Leaving triggering condition for pathloss)

$$10 Log M_{ld} + CIQ_{ld} < T_{1f} - H_{1f}/2$$
,

Equation 4 (Leaving triggering condition for all the other measurement quantities)

$$10 Log M_{ld} + CIQ_{ld} > T_{1f} + H_{1f}/2$$
,

The variables in the formula are defined as follows:

 $M_{Old}$  is the measurement result of a cell that becomes worse than an absolute threshold

CIO<sub>old</sub> is the individual cell offset for the cell becoming worse than the absolute threshold. Otherwise it is equal to 0.

 $T_{If}$  is an absolute threshold

 $H_{1f}$  is the hysteresis parameter for the event 1f.

If the measurement results are pathloss or CPICH-Ec/No then  $M_{Old}$  is expressed as ratios.

If the measurement result is CPICH-RSCP then  $M_{Old}$  is expressed in mW.

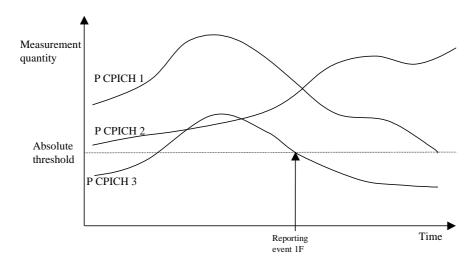


Figure 14.1.2.6-1 [Informative]: Event-triggered report when a Primary CPICH becomes worse than an absolute threshold

In this figure, the parameters hysteresis and time to trigger, as well as the cell individual offsets for all cells are equal to 0.

# 14.1.2.7 Reporting event 1J: A non-active E-DCH but active DCH primary CPICH becomes better than an active E-DCH primary CPICH

When an intra-frequency measurement configuring event 1j is set up, the UE shall:

- 1> create a variable TRIGGERED\_1J\_EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 1J is configured in the UE, the UE shall:

- 1> if "Measurement quantity" is "pathloss" and Equation 1 below is fulfilled for one or more primary CPICHs, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 2 below is fulfilled for one or more primary CPICHs, for each of these primary CPICHs:
  - 2> if all required reporting quantities are available for that cell; and
  - 2> if the equations have been fulfilled for a time period indicated by "Time to trigger", and if the primary CPICH that is better is not included in the E-DCH active set but included in DCH active set and the other primary CPICH is any of the primary CPICHs included in the E-DCH active set, and if that first primary CPICH is not included in the "cells triggered" in the variable TRIGGERED\_1J\_EVENT:
    - 3> include that primary CPICH in the "cells recently triggered" in the variable TRIGGERED\_1J\_EVENT.
- 1> if the value of "Replacement activation threshold" for this event is less than or equal to the current number of cells in the E-DCH active set or equal to 0 and if any primary CPICHs are stored in the "cells recently triggered" in the variable TRIGGERED\_1J\_EVENT:
  - 2> if "Reporting interval" for this event is not equal to 0:
    - 3> if the IE "Periodical reporting running" in the variable TRIGGERED 1J EVENT is set to FALSE:
      - 4> start a timer for with the value of "Reporting interval" for this event and set the IE "Periodical reporting running" in the variable TRIGGERED\_1J\_EVENT to TRUE.
    - 3> set "sent reports" for that primary CPICH in the variable TRIGGERED\_1J\_EVENT to 1.
  - 2> send a measurement report with IEs set as below:
    - 3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1J"; and

- 3> include in "cell measurement event results" all entries of the "cells recently triggered" in the variable TRIGGERED\_1J\_EVENT not in the E-DCH active set but included in DCH active set as well as the "primary CPICH info" of all the primary CPICHs in the E-DCH active set for which the measured value is worse (i.e. greater for pathloss and less for the other measurement quantities) than the one of the entry in "cell recently triggered" that has the best measured value taking into account their cell individual offset. The "primary CPICH info" for those cells shall be ordered according to their measured value taking into account their cell individual offset, beginning with the best cell to the worst one;
- 3> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
- 2> move all entries from "cells recently triggered" to "cells triggered" in the variable TRIGGERED\_1J\_EVENT.
- 1> if the timer for the periodical reporting has expired:
  - 2> if any primary CPICH is included in the "cells triggered" in the variable TRIGGERED\_1J\_EVENT, and not included in the current E-DCH active set but included in DCH active set:
    - 3> if "Reporting interval" for this event is not equal to 0, and if "Amount of reporting" is greater than "sent reports" stored for that primary CPICH, in "cells triggered" in the variable TRIGGERED\_1J\_EVENT:
      - 4> increment the stored counter "sent reports" for all CPICH in "cell triggered" in variable TRIGGERED\_1J\_EVENT;
      - 4> start a timer with the value of "Reporting interval" for this event;
      - 4> send a measurement report with IEs set as below:
        - 5> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1J"; and
        - 5> include in "cell measurement event results" all entries of the variable TRIGGERED\_1J\_EVENT with value of IE "sent report" equal to or smaller than value of "Amount of reporting" and that are not part of the E-DCH active set but included in DCH active set as well as the "primary CPICH info" of all the primary CPICHs in the E-DCH active set for which the measured value is worse (i.e. greater for pathloss and less for the other measurement quantities) than the one of the entry in "cell triggered" that has the best measured value, ordering the "primary CPICH info" according to their measured value beginning with the best cell to the worst one, taking into account the cell individual offset for each cell;
        - 5> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
      - 4> if "sent reports" in variable TRIGGERED\_1J\_EVENT is equal to "Amount of reporting" for all entries:
        - 5> set the IE "Periodical Reporting running" in the variable TRIGGERED\_1J\_EVENT to FALSE and disable the timer for the periodical reporting.
- 1> if "Measurement quantity" is "pathloss" and Equation 3 below is fulfilled for a primary CPICH, or if "Measurement quantity" is "CPICH Ec/N0" or "CPICH RSCP", and Equation 4 below is fulfilled for a primary CPICH or;
- 1> if a primary CPICH is added to the E-DCH active set:
  - 2> if that primary CPICH is included in the "cells triggered" or "cells recently triggered" in the variable TRIGGERED\_1J\_EVENT:
    - 3> remove the entry of that primary CPICH from "cells triggered" or "cells recently triggered" in the variable TRIGGERED\_1J\_EVENT.
    - 3> if no entry in the variable TRIGGERED\_1J\_EVENT has a value of "sent reports" smaller than "Amount of reporting" or
    - 3> if there is no entry in the variable TRIGGERED\_1J\_EVENT:
      - 4> if the reporting interval timer is running:

5> stop the reporting interval timer;

5> set the IE "Periodical reporting running" in the variable TRIGGERED\_1J\_EVENT to FALSE.

Equation 1 (Triggering condition for pathloss)

$$10 Log M_{ew} + CIQ_{ew} \le 10 Log M_{hAS} + CIQ_{hAS} - H_{1i}/2$$

Equation 2 (Triggering condition for all the other measurement quantities)

$$10 Log M_{ew} + CIQ_{ew} \ge 10 Log M_{hAS} + CIQ_{hAS} + H_{1i}/2$$

Equation 3 (Leaving triggering condition for pathloss)

$$10 Log M_{ew} + CIQ_{ew} > 10 Log M_{hAS} + CIQ_{hAS} + H_{1i}/2$$

Equation 4 (Leaving triggering condition for all the other measurement quantities)

$$10 Log M_{ew} + CIQ_{ew} < 10 Log M_{AS} + CIQ_{AS} - H_{ii}/2$$

The variables in the formula are defined as follows:

 $M_{New}$  is the measurement result of the cell not included in the E-DCH active set but included in DCH active set.

 $CIO_{New}$  is the individual cell offset for the cell not included in the E-DCH active set but included in DCH active set becoming better than the cell in the E-DCH active set if an individual cell offset is stored for that cell. Otherwise it is equal to 0.

For pathloss:

 $M_{InAS}$  is the measurement result of the cell in the E-DCH active set with the highest measurement result.

For other measurement quantities:

 $M_{InAS}$  is the measurement result of the cell in the E-DCH active set with the lowest measurement result.

CIO<sub>InAS</sub> is the individual cell offset for the cell in the E-DCH active set that is becoming worse than the new cell.

 $H_{1J}$  is the hysteresis parameter for the event 1J.

If the measurement results are pathloss or CPICH-Ec/No then  $M_{New}$  and  $M_{inAS}$  are expressed as ratios.

If the measurement result is CPICH-RSCP then  $M_{New}$  and  $M_{inAS}$  are expressed in mW.

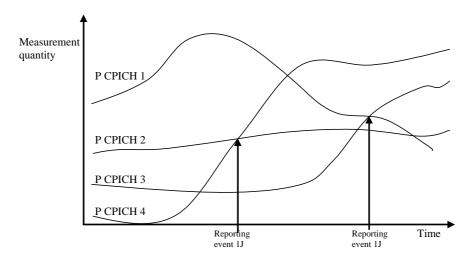


Figure 14.1.2.7-1 [Informative]: A primary CPICH that is not included in the E-DCH active set but included in DCH active set becomes better than a primary CPICH that is in the E-DCH active set

In this figure, the parameters hysteresis and time to trigger, as well as the cell individual offsets for all cells are equal to 0 and replacement activation threshold is equal to 0 or 1 or 2. In this example the cells belonging to primary CPICH 1 and 2 are in the E-DCH active set, but the cells transmitting primary CPICH 3 and CPICH 4 are not (yet) in the E-DCH active set but included in DCH active set.

The first measurement report is sent when primary CPICH 4 becomes better than primary CPICH 2. The "cell measurement event result" of the measurement report contains the information of primary CPICH 4 and CPICH 2.

Assuming that the E-DCH active set has been updated after the first measurement report (E-DCH active set is now primary CPICH 1 and primary CPICH 4), the second report is sent when primary CPICH 3 becomes better than primary CPICH 1. The "cell measurement event result" of the second measurement report contains the information of primary CPICH 3 and primary CPICH 1.

# 14.1.3 Intra-frequency reporting events for TDD

### 14.1.3.1 Reporting event 1G: Change of best cell (TDD)

When an intra-frequency measurement configuring event 1g is set up, the UE shall

- 1> create a variable TRIGGERED\_1G\_EVENT related to that measurement, which shall initially be empty.
- 1> store the P-CCPCH of the serving cell in the variable TRIGGERED\_1G\_EVENT as the best cell.
- 1> delete this variable when the measurement is released.

When event 1G is configured in the UE, the UE shall:

- 1> if the equation 1 is fulfilled for one or more P-CCPCHs during the time "Time to trigger"
  - 2> if those P-CCPCHs are not included in the "primary CCPCH info" in the variable TRIGGERED\_1G\_EVENT:
    - 3> include those P-CCPCHs in "cells triggered" in the variable TRIGGERED\_1G\_EVENT;
  - 2> update the prebest cell to the best P-CCPCH and for each cell in the variable TRIGGERED\_1G\_EVENT:
    - 3> if Equation 2 below is fulfilled for a primary CCPCH:
      - 4> remove the entry of that primary CCPCH from "cells triggered" in the variable TRIGGERED\_1G\_EVENT;
  - 2> send a measurement report with IEs set as below:
    - 3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1g";
    - 3> set the first entry in "cell measurement event results" to the "Cell parameters ID" of the P-CCPCH which was stored in the variable TRIGGERED\_1G\_EVENT;
    - 3> include all entries in "cells triggered" in variable TRIGGERED\_1G\_EVENT in "cell measurement event results" in the measurement report in descending order according to:

$$10 \cdot LogM + O$$

where M is the P-CCPCH RSCP and O the individual offset of a cell;

- 3> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
- 1> if Equation 2 below is fulfilled for a primary CCPCH:
  - 2> if a primary CCPCH is included in the "cells triggered" in the variable TRIGGERED\_1G\_EVENT:
    - 3> remove the entry of that primary CCPCH from "cells triggered" in the variable TRIGGERED\_1G\_EVENT;

The UE shall use the equations below for evaluation of reporting event 1g:

Equation 1

$$10 \cdot Log M + O_i - H_{1g} > 10 \cdot Log M_{previous best} + O_{previous best}$$

The variables in the formula are defined as follows:

M<sub>previous\_best</sub> is the current P-CCPCH RSCP of the previous best cell expressed in mW

 $O_{previous\ best}$  is the cell individual offset of the previous best cell

 $M_i$  is the current P-CCPCH RSCP of the currently evaluated cell i expressed in mW

 $O_i$  is the cell individual offset of the currently evaluated cell i

 $H_{1g}$  is the hysteresis parameter for the event 1g.

Equation 2

$$10 Log M + O_i + H_{lg} < 10 Log M_{previous best} + O_{previous best}$$

The variables in the formula are defined as follows:

M<sub>previous best</sub> is the current P-CCPCH RSCP of the previous best cell expressed in mW

 $O_{previous\ best}$  is the cell individual offset of the previous best cell

 $M_i$  is the current P-CCPCH RSCP of the currently evaluated cell i expressed in mW

 $O_i$  is the cell individual offset of the currently evaluated cell i

 $H_{1g}$  is the hysteresis parameter for the event 1g.

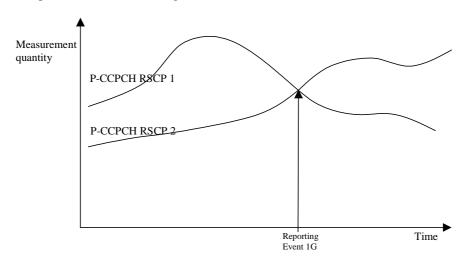


Figure 14.1.3.1-1: A P-CCPCH RSCP becomes better than the previous best P-CCPCH RSCP

### 14.1.3.2 Reporting event 1H: Timeslot ISCP below a certain threshold (TDD)

When an intra-frequency measurement configuring event 1h is set up, the UE shall:

1> create a variable TRIGGERED\_1H\_EVENT related to that measurement, which shall initially be empty;

1> delete this variable when the measurement is released.

When event 1h is configured in the UE, the UE shall:

1> if equation 1 is fulfilled for a time period indicated by "Time to trigger" and if that P-CCPCH is not included in the IE "cells triggered" in the variable TRIGGERED\_1H\_EVENT:

- 2> include that P-CCPCH in the IE "cells triggered" in the variable TRIGGERED\_1H\_EVENT;
- 2> send a measurement report with the IEs set as below:
  - 3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1h" and in "cell measurement event results" the "Cell parameters ID" of the P-CCPCH that triggered the report;
  - 3> include in "Cell measured results" the "Timeslot ISCP" of those cells that are included in the variable TRIGGERED\_1H\_EVENT and "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset for each cell.
- 1> if Equation 2 below is fulfilled for a primary CCPCH:
  - 2> if a primary CCPCH is included in the "cells triggered" in the variable TRIGGERED\_1H\_EVENT:
    - 3> remove the entry of that primary CCPCH from "cells triggered" in the variable TRIGGERED\_1H\_EVENT.

The UE shall use the equations below for evaluation of reporting event 1h:

Equation 1

$$10 \cdot Log M_i + H_{1h} + O_i < T_{1h},$$

Equation 2

$$10 \cdot Log M_i - H_{1h} + O_i > T_{1h},$$

The variables in the formula are defined as follows:

 $M_i$  is the Timeslot ISCP of the currently evaluated cell i expressed in mW

 $O_i$  is the cell individual offset of the currently evaluated cell i

 $T_{1h}$  is the Threshold for event 1h

 $H_{1h}$  is the hysteresis parameter for the event 1h.

Before any evaluation is done, the Timeslot ISCP expressed in mW is filtered according to subclause 8.6.7.2.

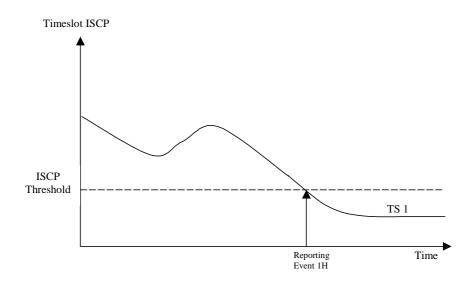


Figure 14.1.3.2-1: An ISCP value of a timeslot drops below an absolute threshold

### 14.1.3.3 Reporting event 1I: Timeslot ISCP above a certain threshold (TDD)

When an intra-frequency measurement configuring event 1i is set up, the UE shall:

- 1> create a variable TRIGGERED\_1I\_EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 1i is configured in the UE, the UE shall:

- 1> if equation 1 is fulfilled for a time period indicated by "Time to trigger" and if that P-CCPCH is not included in the IE "cells triggered" in the variable TRIGGERED\_1I\_EVENT:
  - 2> include that P-CCPCH in the IE "cells triggered" in the variable TRIGGERED\_1I\_EVENT;
  - 2> send a measurement report with the IEs set as below:
    - 3> set in "intra-frequency measurement event results": "Intrafrequency event identity" to "1i" and in "cell measurement event results" to the "Cell parameters ID" of the P-CCPCH that triggered the report;
    - 3> include in "measured results" the "Timeslot ISCP" of those cells that are included in the variable TRIGGERED\_1I\_EVENT and "additional measured results" according to 8.4.2, not taking into account the cell individual offset for each cell.
- 1> if Equation 2 below is fulfilled for a primary CCPCH:
  - 2> if a primary CCPCH is included in the "cells triggered" in the variable TRIGGERED\_1I\_EVENT:
    - 3> remove the entry of that primary CCPCH from "cells triggered" in the variable TRIGGERED\_1I\_EVENT.

The UE shall use the equation below for evaluation of reporting event 1i:

Equation 1

$$10 \cdot Log M_i - H_{1i} + O_i > T_{1i}$$

Equation 2

$$10 \cdot Log M_i - H_{1i} + O_i < T_{1i},$$

The variables in the formula are defined as follows:

 $M_i$  is the Timeslot ISCP of the currently evaluated cell i expressed in mW

 $O_i$  is the cell individual offset of the currently evaluated cell i

 $T_{1i}$  is the Threshold for event 1i

 $H_{Ii}$  is the hysteresis parameter for the event 1i.

Before any evaluation is done, the Timeslot ISCP expressed in mW is filtered according to subclause 8.6.7.2.

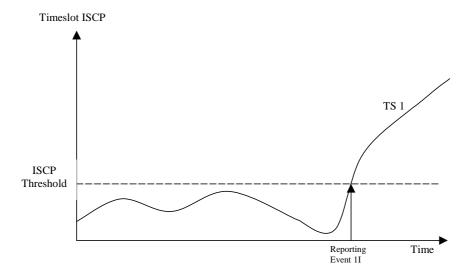


Figure 14.1.3.3-1: An ISCP value of a timeslot exceeds a certain threshold

# 14.1.4 Event-triggered periodic intra-frequency measurement reports (informative)

### 14.1.4.1 Cell addition failure (FDD only)

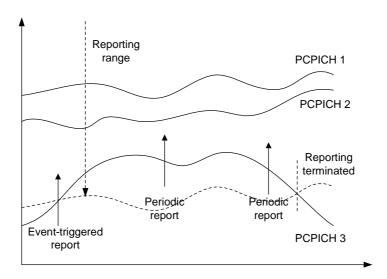


Figure 14.1.4.1-1: Periodic reporting triggered by event 1A

When a cell enters the reporting range and triggers event 1A, the UE shall transmit a MEASUREMENT REPORT to the UTRAN and typically this may result in an update of the active set. However, in some situations the UTRAN may be unable to add a strong cell to the active set typically due to capacity shortage for example.

The UE shall continue reporting after the initial report by reverting to periodical measurement reporting if the reported cell is not added to the active set. This is illustrated in Figure 14.1.4.1-1. During periodic reporting the UE shall transmit MEASUREMENT REPORT messages to the UTRAN at predefined intervals. The reports shall include reporting information of the cells in the current active set and of the monitored cell(s) in the reporting range.

Event-triggered periodic measurement reporting shall be terminated if:

- 1> there are no longer any monitored cell(s) within the reporting range; or
- 1> the UTRAN has added cells to the active set so that it includes the maximum number of cells (defined by the **reporting deactivation threshold** parameter), which are allowed for event 1A to be triggered; or

1> the UE has sent the maximum number of MEASUREMENT REPORT messages (defined by the **amount of reporting** parameter).

The reporting period is assigned by the UTRAN (with the **Reporting interval** parameter). If the reporting interval is set to zero event-triggered periodic measurement reporting shall not be applied.

### 14.1.4.1a Cell removal failure (FDD only)

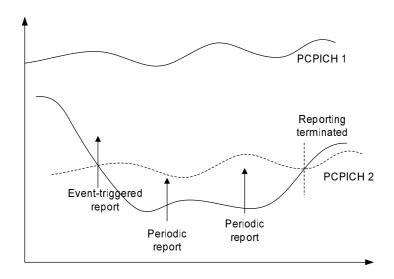


Figure 14.1.4.1a: Periodic reporting triggered by event 1B

When a cell enters the removal range and triggers event 1B, the UE shall transmit a MEASUREMENT REPORT to the UTRAN and typically this may result in the removal of the weakest active cell. If the UTRAN is unable to receive MEASUREMENT REPORT after the maximum retransmission, it is beneficial to receive continuous reports in this case as well.

The UE shall revert to periodical measurement reporting if the UTRAN does not update the active set after the transmission of the measurement report. This is illustrated in Figure 14.1.4.1a. During periodic reporting the UE shall transmit MEASUREMENT REPORT messages to the UTRAN at predefined intervals.

Event-triggered periodic measurement reporting shall be terminated if:

- 1> there are no longer any monitored cell(s) within the removal range; or
- 1> the UTRAN has removed cells from the active set so that there are no longer the minimum amount of active cells for event 1B to be triggered; or
- 1> the UE has sent the maximum number of MEASUREMENT REPORT messages (defined by the "amount of reporting" parameter).

The reporting period is assigned by the UTRAN (with the "Reporting interval" parameter). If the reporting interval is set to zero, event-triggered periodic measurement reporting shall not be applied.

### 14.1.4.2 Cell replacement failure (FDD only)

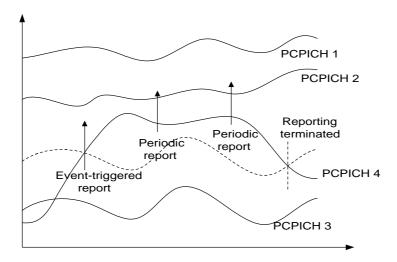


Figure 14.1.4.1-2: Periodic reporting triggered by event 1C

When a cell enters the replacement range and triggers event 1C, the UE shall transmit a MEASUREMENT REPORT to the UTRAN and typically this may result in the replacement of the weakest active cell. If the UTRAN is unable to replace the cell due to for example capacity shortage, it is beneficial to receive continuous reports in this case as well.

The UE shall revert to periodical measurement reporting if the UTRAN does not update the active set after the transmission of the measurement report. This is illustrated in Figure 14.1.4.1-2. During periodic reporting the UE shall transmit MEASUREMENT REPORT messages to the UTRAN at predefined intervals. The reports shall include reporting information of the cells in the current active set and of the monitored cell(s) in the replacement range.

Event-triggered periodic measurement reporting shall be terminated if:

- 1> there are no longer any monitored cell(s) within the replacement range; or
- 1> the UTRAN has removed cells from the active set so that there are no longer the minimum amount of active cells for event 1C to be triggered (as defined by the **replacement activation threshold** parameter); or
- 1> the UE has sent the maximum number of MEASUREMENT REPORT messages (defined by the **amount of reporting** parameter).

The reporting period is assigned by the UTRAN (with the **Reporting interval** parameter). If the reporting interval is set to zero, event-triggered periodic measurement reporting shall not be applied.

# 14.1.5 Mechanisms available for modifying intra-frequency measurement reporting behaviour (informative)

### 14.1.5.1 Hysteresis

To limit the amount of event-triggered reports, a hysteresis parameter may be connected with each reporting event given above. The value of the hysteresis is given to the UE in the Reporting criteria field of the Measurement Control message.

In the example in Figure 14.1.5.1-1, the hysteresis ensures that the event 1D (FDD) or IG(TDD) (primary CPICH(FDD)/CCPCH(TDD) 2 becomes the best cell) is not reported until the difference is equal to the hysteresis value. The fact that primary CPICH(FDD)/CCPCH(TDD) 1 becomes best afterwards is not reported at all in the example since the primary CPICH(FDD)/CCPCH(TDD) 1 does not become sufficiently better than the primary CPICH(FDD)/CCPCH(TDD) 2.

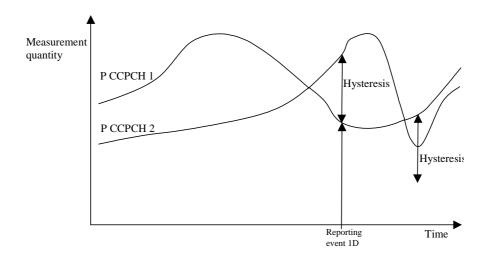


Figure 14.1.5.1-1: Hysteresis limits the amount of measurement reports

### 14.1.5.2 Time-to-trigger

To limit the measurement signalling load, a time-to-trigger parameter could be connected with each reporting event given above. The value of the time-to-trigger is given to the UE in the Reporting criteria field of the Measurement Control message.

The effect of the time-to-trigger is that the report is triggered only after the conditions for the event have existed for the specified time-to-trigger. In the following FDD example in Figure 14.1.5.2-1, the use of time-to-trigger means that the event (primary CPICH 3 enters the reporting range) is not reported until is has been within the range for the time given by the time-to-trigger parameter.

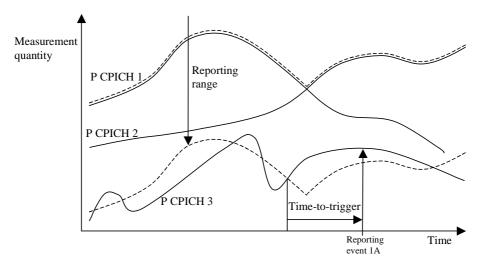


Figure 14.1.5.2-1: Time-to-trigger limits the amount of measurement reports

In the following TDD example in Figure 14.1.5.2-2, the use of time-to-trigger means that the event (Timeslot ISCP upon certain threshold) is not reported until it has been upon the threshold for the time given by the time-to trigger parameter.

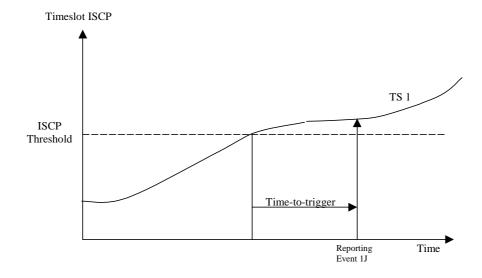


Figure 14.1.5.2-2: Time-to-trigger limits the amount of measurement reports

NOTE: The time-to-trigger could be combined with hysteresis, i.e. a hysteresis value is added to the measurement quantity before evaluating if the time-to-trigger timer should be started.

#### 14.1.5.3 Cell individual offsets

For each cell that is monitored, an offset can be assigned with inband signalling. The offset can be either positive or negative. The offset is added to the measurement quantity before the UE evaluates if an event has occurred. The UE receives the cell individual offsets for each primary CPICH(FDD)/CCPCH(TDD) in the IE "Cell individual offset" included in the IE "Cell info" associated with each measurement object included in the MEASUREMENT CONTROL message.

For the FDD example, in Figure 14.1.5.3-1, since an offset is added to primary CPICH 3, it is the dotted curve that is used to evaluate if an event occurs. Hence, this means that measurement reports from UE to UTRAN are triggered when primary CPICH plus the corresponding offset, i.e. the dotted curve, leaves and enters the reporting range and when it gets better than primary CPICH 1 (if these events have been ordered by UTRAN). This offset mechanism provides the network with an efficient tool to change the reporting of an individual primary CPICH.

By applying a positive offset, as in Figure 14.1.5.3-1, the UE will send measurement reports as if the primary CPICH is offset *x* dB better than what it really is. This could be useful if the operator knows that a specific cell is interesting to monitor more carefully, even though it is not so good for the moment. In the example in Figure 14.1.5.3-1, the operator might know by experience that in this area primary CPICH 3 can become good very quickly (e.g. due to street corners) and therefore that it is worth reporting more intensively. Depending on the implemented handover evaluation algorithm, this may result in the cell with primary CPICH 3 being included in the active set earlier than would have been the case without the positive offset.

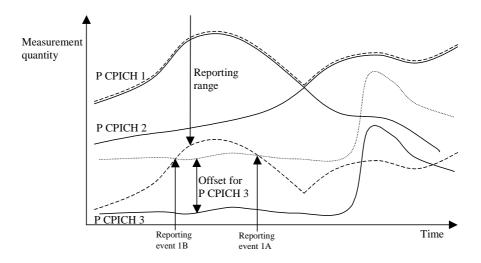


Figure 14.1.5.3-1: A positive offset is applied to primary CPICH 3 before event evaluation in the UE

For the TDD example, in Figure 14.1.5.3-2, an offset is added to primary CCPCH2, it is the dotted curve that is used to evaluate if the primary CCPCH2 becomes better than primary CCPCH1 (ordered by the UTRAN).

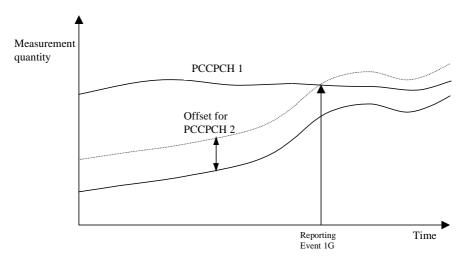


Figure 14.1.5.3-2: A positive offset is applied to primary CCPCH 2

Correspondingly, the operator can choose to apply a negative offset to a primary CCPCH. Then the reporting on that primary CCPCH is limited and the corresponding cell may be, at least temporarily excluded from the active set or as a target cell for handover.

It is important to note that the offset is added before triggering events, i.e. the offset is added by the UE before evaluating if a measurement report should be sent as opposed to offsets that are applied in the network and used for the actual handover evaluation. It should also be noted that the cell individual offset is not used in all measurement reporting events, and that it is not applied to all events in the same way.

### 14.1.5.4 Forbid a Primary CPICH to affect the reporting range (FDD only)

The reporting range affects the reporting events 1A and 1B presented above. The reporting range is defined as a function of all the Primary CPICHs in the active set (see 14.1.2.1 and 14.1.2.2). If the parameter W is set to 0, the reporting range is defined relative to the best Primary CPICH. However, there could be cases where it is good to forbid a specific Primary CPICH to affect the reporting range. For example in Figure 14.1.5.4-1 the network has requested the UE to not let Primary CPICH 3 affect the reporting range. This mechanism could be effective if the operator knows by experience that the quality of Primary CPICH 3 is very unstable in a specific area and therefore should not affect the reporting of the other Primary CPICHs.

The UE shall ignore that a Primary CPICH is forbidden to affect the reporting range if all of the following conditions are fulfilled:

- the Primary CPICH is included in active set; and
- all cells in active set are defined as Primary CPICHs forbidden to affect the reporting range.

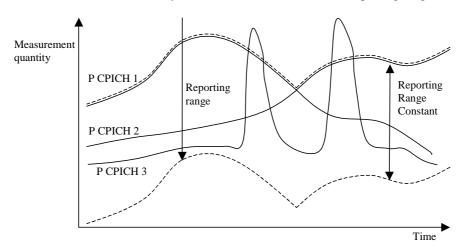


Figure 14.1.5.4-1: Primary CPICH 3 is forbidden to affect the reporting range

# 14.1.6 Report quantities in intra-frequency measurements

The quantities that the UE shall report to UTRAN when the event is triggered for an intra-frequency measurement are given by the IE "Intra-frequency reporting quantity" stored for this measurement and can be the following:

- 1 SFN-SFN observed time difference
- 2 Cell synchronisation information
- 3 Cell Identity
- 4 Downlink E<sub>c</sub>/N<sub>0</sub> (FDD).
- 5 Downlink path loss.

For FDD:

Pathloss in dB = Primary CPICH Tx power - CPICH RSCP.

- For Primary CPICH Tx power the IE "Primary CPICH Tx power" shall be used. The unit is dBm.
- CPICH RSCP is the result of the CPICH RSCP measurement. The unit is dBm.

For TDD:

Pathloss in dB = Primary CCPCH TX power - Primary CCPCH RSCP.

- For Primary CCPCH TX power the IE "Primary CCPCH TX Power" shall be used. The unit is dBm.
- Primary CCPCH RSCP is the result of the Primary CCPCH RSCP measurement. The unit is dBm.

If necessary Pathloss shall be rounded up to the next higher integer.

Results higher than 158 shall be reported as 158.

Results lower than 46 shall be reported as 46.

- 6 Downlink received signal code power (RSCP) after despreading (of a primary CPICH for FDD, and of a primary CCPCH for TDD).
- 7 ISCP measured on Timeslot basis. (TDD)

8 Proposed TGSN (TDD)

A description of those values can be found in [7] and [8].

# 14.2 Inter-frequency measurements

# 14.2.0a Inter-frequency measurement quantities

The two first measurement quantities listed below are used by the UE to evaluate whether an inter-frequency measurement event has occurred or not, through the computation of a frequency quality estimate. The quantity to use to compute the frequency quality estimate for an inter-frequency measurement is given in the "Inter-frequency measurement quantity" stored for that measurement.

- 1 Downlink Ec/No (FDD)
- 2 Downlink received signal code power (RSCP) after despreading.
- 3 Downlink path loss.

For FDD:

Pathloss in dB = Primary CPICH Tx power - CPICH RSCP.

- For Primary CPICH Tx power the IE "Primary CPICH Tx power" shall be used. The unit is dBm.
- CPICH RSCP is the result of the CPICH RSCP measurement. The unit is dBm.

For TDD:

Pathloss in dB = Primary CCPCH TX power - Primary CCPCH RSCP.

- For Primary CCPCH TX power the IE "Primary CCPCH TX Power" shall be used. The unit is dBm.
- Primary CCPCH RSCP is the result of the Primary CCPCH RSCP measurement. The unit is dBm.

A description of those values can be found in [7] and [8].

# 14.2.0b Frequency quality estimate

#### 14.2.0b.1 FDD cells

The frequency quality estimate used in events 2a, 2b 2c, 2d, 2e and 2f is defined as:

$$Q_{\textit{frequency}j} = 10 \cdot Log M_{\textit{frequency}j} = W_{j} \cdot 10 \cdot Log \left( \sum_{i=1}^{N_{A,j}} M_{i,j} \right) + (1 - W_{j}) \cdot 10 \cdot Log M_{\textit{Best }j},$$

The variables in the formula are defined as follows ("the virtual active set on frequency j" should be understood as the active set if frequency j is the used frequency. If frequency j is a non-used frequency, the way the virtual active set is initiated and updated is described in subclause 14.11):

 $Q_{frequency j}$  is the estimated quality of the virtual active set on frequency j.

 $M_{frequency j}$  is the estimated quality of the virtual active set on frequency j.

M<sub>i i</sub> is a measurement result of cell i in the virtual active set on frequency j.

 $N_{A\,j}$  is the number of cells in the virtual active set on frequency j.

 $M_{Best\,j}$  is the measurement result of the cell in the virtual active set on frequency j with the highest measurement result.

W<sub>i</sub> is a parameter sent from UTRAN to UE and used for frequency j.

If the measurement result is CPICH-Ec/No then  $M_{Frequency}$ ,  $M_{i,i}$  and  $M_{Best}$  are expressed as ratios.

If the measurement result is CPICH-RSCP or PCCPCH-RSCP then  $M_{Frequency}$ ,  $M_{ij}$  and  $M_{Best}$  are expressed in mW.

#### 14.2.0b.2 TDD cells

$$Q_{i,frequencyj} = 10 \cdot Log M_i + O_{i,j},$$

 $Q_{i,frequencyj}$  is the estimated quality of cell i on frequency j.

Mi is the measurement result for Primary CCPCH RSCP of cell i on the primary frequency expressed in mW.

 $O_{i,j}$  is the cell individual offset of the currently evaluated cell i on frequency j.  $O_{ij}$  is set by IE " Cell individual offset"

# 14.2.0c Inter-frequency reporting quantities

The quantities that the UE shall report for each cell to UTRAN when the event is triggered for an inter-frequency measurement is given by the "Inter-frequency reporting quantity" IE stored for this measurement and can be the following, from 1 to 8. The quantity number 9 can be reported for each frequency that triggered the report.

- 1 Cell identity
- 2 SFN-SFN observed time difference
- 3 Cell synchronisation information
- 4 Downlink Ec/No (FDD)
- 5 Downlink path loss.

For FDD:

Pathloss in dB = Primary CPICH Tx power - CPICH RSCP.

- For Primary CPICH Tx power the IE "Primary CPICH Tx power" shall be used. The unit is dBm.
- CPICH RSCP is the result of the CPICH RSCP measurement. The unit is dBm.

For TDD:

Pathloss in dB = Primary CCPCH TX power - Primary CCPCH RSCP.

- For Primary CCPCH TX power the IE "Primary CCPCH TX Power" shall be used. The unit is dBm.
- Primary CCPCH RSCP is the result of the Primary CCPCH RSCP measurement. The unit is dBm.

If necessary Pathloss shall be rounded up to the next higher integer.

Results higher than 158 shall be reported as 158.

Results lower than 46 shall be reported as 46.

- 6 Downlink received signal code power (RSCP) after despreading (of a primary CPICH for FDD, and of a primary CCPCH for TDD).
- 7 ISCP measured on Timeslot basis. (TDD)
- 8 Proposed TGSN (TDD)
- 9 UTRA carrier RSSI

A description of those values can be found in [7] and [8].

# 14.2.1 Inter-frequency reporting events

Within the measurement reporting criteria field in the MEASUREMENT CONTROL message UTRAN notifies the UE which events should trigger the UE to send a MEASUREMENT REPORT message. The listed events are the toolbox from which the UTRAN can choose the reporting events that are needed for the implemented handover evaluation function, or other radio network functions.

All events are evaluated with respect to one of the measurement quantities given in subclause 14.2.0a. The measurement quantities are measured on the monitored primary common pilot channels (CPICH) in FDD mode and the monitored primary common control channels (PCCPCH) in TDD mode of the cell defined in the measurement object. A "non-used frequency" is a frequency that the UE has been ordered to measure upon but is not used for the connection. A "used frequency" is a frequency that the UE has been ordered to measure upon and is also currently used for the connection.

The "monitored set on non-used frequency" consists of cells in "cells for measurement" (or all cells in CELL\_INFO\_LIST if "cells for measurement" is not present) that are not part of the virtual active set on that non-used frequency.

When one inter-frequency measurement identity corresponds to multiple inter-frequency events with identical event identities, the UE behaviour is not specified.

### 14.2.1.1 Event 2a: Change of best frequency.

When event 2a is configured in the UE within a measurement, the UE shall:

- 1> when the measurement is initiated or resumed:
  - 2> store the used frequency in the variable BEST\_FREQUENCY\_2A\_EVENT.
- 1> if equation 1 below has been fulfilled for a time period indicated by "Time to trigger" for a frequency included for that event and which is not stored in the variable BEST\_FREQUENCY\_2A\_EVENT:
  - 2> send a measurement report with IEs set as below:
    - 3> set in "inter-frequency measurement event results":
      - 4> "inter-frequency event identity" to "2a"; and
      - 4> "Frequency info" to the frequency that triggered the event; and
      - 4> "Non frequency related measurement event results" to the "Primary CPICH info" of the best primary CPICH for FDD cells or "Primary CCPCH info" to the "Cells parameters ID" of the best primary CCPCH for TDD cells on that frequency, not taking into account the cell individual offset.
    - 3> if a non-used frequency triggered the measurement report:
      - 4> include in IE "Inter-frequency measured results list" the measured results for the non-used frequency that triggered the event, not taking into account the cell individual offset.
    - 3> if the used frequency triggered the measurement report:
      - 4> do not include the IE "Inter-frequency measured results list" in the measurement report.
    - 3> set the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset;
  - 2> update the variable BEST\_FREQUENCY\_2A\_EVENT with that frequency.

Equation 1:

$$Q_{NotRes} \ge Q_{Rest} + H_{2a}/2$$

The variables in the formula are defined as follows:

 $Q_{Not\ Best}$  is the quality estimate of a frequency not stored the "best frequency" in the variable BEST\_FREQUENCY\_2A\_EVENT.

 $Q_{Best}$  is the quality estimate of the frequency stored in "best frequency" in the variable BEST\_FREQUENCY\_2A\_EVENT.

 $H_{2a}$  is the hysteresis parameter for the event 2a in that measurement.

# 14.2.1.2 Event 2b: The estimated quality of the currently used frequency is below a certain threshold **and** the estimated quality of a non-used frequency is above a certain threshold.

When an inter-frequency measurement configuring event 2b is set up, the UE shall:

- 1> create a variable TRIGGERED\_2B\_EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 2b is configured in the UE within a measurement, the UE shall:

- 1> if equations 1 and 2 below have been fulfilled for a time period indicated by "Time to Trigger" from the same instant, respectively for one or several non-used frequencies included for that event and for the used frequency:
  - 2> if any of those non-used frequency is not stored in the variable TRIGGERED\_2B\_EVENT:
    - 3> store the non-used frequencies that triggered the event and that were not previously stored in the variable TRIGGERED\_2B\_EVENT into that variable;
    - 3> send a measurement report with IEs set as below:
      - 4> set in "inter-frequency measurement event results":
        - 5> "inter-frequency event identity" to "2b"; and
        - 5> for each non-used frequency that triggered the event, beginning with the best frequency:
          - 6> "Frequency info" to that non-used frequency; and
          - 6> "Non frequency related measurement event results" to the "Primary CPICH info" of the best primary CPICH for FDD cells or "Primary CCPCH info" to the "Cell parameters ID" of the best primary CCPCH for TDD cells on that non-used frequency, not taking into account the cell individual offset.
      - 4> include in IE "Inter-frequency measured results list" the measured results for each non-used frequency that triggered the event, not taking into account the cell individual offset;
      - 4> set the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset.
- 1> if equation 3 below is fulfilled for a non-used frequency stored in the variable TRIGGERED\_2B\_EVENT:
  - 2> remove that non-used frequency from the variable TRIGGERED\_2B\_EVENT.
- 1> if equation 4 below is fulfilled for the used frequency:
  - 2> clear the variable TRIGGERED\_2B\_EVENT.

Triggering conditions:

Equation 1:

$$Q_{Nonused} \ge T_{Nonused} + H_{2b}/2$$

The variables in the formula are defined as follows:

 $Q_{Non used}$  is the quality estimate of a non-used frequency that becomes better than an absolute threshold.

 $T_{Non \, used \, 2b}$  is the absolute threshold that applies for this non-used frequency in that measurement.

 $H_{2b}$  is the hysteresis parameter for the event 2b.

Equation 2:

$$Q_{U_{SP}} \leq T_{U_{SP}} - H_{2h}/2$$

The variables in the formula are defined as follows:

 $Q_{Used}$  is the quality estimate of the used frequency.

 $T_{Used\ 2b}$  is the absolute threshold that applies for the used frequency in that measurement.

 $H_{2b}$  is the hysteresis parameter for the event 2b.

Leaving triggered state condition:

Equation 3:

$$Q_{Nonused} < T_{Nonused} - H_{2b}/2$$

The variables in the formula are defined as follows:

 $Q_{Non used}$  is the quality estimate of a non-used frequency that is stored in the variable TRIGGERED\_2B\_EVENT.

 $T_{Non used 2b}$  is the absolute threshold that applies for this non-used frequency in that measurement.

 $H_{2b}$  is the hysteresis parameter for the event 2b.

Equation 4:

$$Q_{Used} > T_{Usedb} + H_{2b}/2$$

The variables in the formula are defined as follows:

 $Q_{Used}$  is the quality estimate of the used frequency.

 $T_{Used\ 2b}$  is the absolute threshold that applies for the used frequency in that measurement.

 $H_{2b}$  is the hysteresis parameter for the event 2b.

# 14.2.1.3 Event 2c: The estimated quality of a non-used frequency is above a certain threshold

When an inter-frequency measurement configuring event 2c is set up, the UE shall:

- 1> create a variable TRIGGERED\_2C\_EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 2c is configured in the UE within a measurement, the UE shall:

- 1> if equation 1 below has been fulfilled for one or several non-used frequencies included for that event during the time "Time to trigger":
  - 2> if any of those non-used frequencies is not stored in the variable TRIGGERED\_2C\_EVENT:
    - 3> store the non-used frequencies that triggered the event and that were not previously stored in the variable TRIGGERED\_2C\_EVENT into that variable;
    - 3> send a measurement report with IEs set as below:
      - 4> set in "inter-frequency measurement event results":
        - 5> "inter-frequency event identity" to "2c"; and

- 5> for each non-used frequency that triggered the event, beginning with the best frequency:
  - 6> "Frequency info" to that non-used frequency; and
  - 6> "Non frequency related measurement event results" to the "Primary CPICH info" of the best primary CPICH for FDD cells or "Primary CCPCH info" to the "Cell parameters ID" of the best primary CCPCH for TDD cells on that non-used frequency, not taking into account the cell individual offset.
- 4> include in IE "Inter-frequency measured results list" the measured results for each non-used frequency that triggered the event, not taking into account the cell individual offset;
- 4> set the IE "additional measured results" according to subclause 8.4.2 not taking into account the cell individual offset.
- 1> if equation 2 below is fulfilled for a non-used frequency stored in the variable TRIGGERED\_2C\_EVENT:
  - 2> remove that non-used frequency from the variable TRIGGERED\_2C\_EVENT.

Equation 1:

$$Q_{Nonused2c} + H_{2c}/2$$

The variables in the formula are defined as follows:

 $Q_{Non \, used}$  is the quality estimate of a non-used frequency that becomes better than an absolute threshold.

 $T_{Non\ used\ 2c}$  is the absolute threshold that applies for this non-used frequency in that measurement.

 $H_{2c}$  is the hysteresis parameter for the event 2c.

Leaving triggered state condition:

Equation 2:

$$Q_{Nomsed} < T_{Nomsedic} - H_{2c}/2$$

The variables in the formula are defined as follows:

 $Q_{Non used}$  is the quality estimate of a non-used frequency stored in the variable TRIGGERED\_2C\_EVENT.

 $T_{Non used 2c}$  is the absolute threshold that applies for this non-used frequency in that measurement.

 $H_{2c}$  is the hysteresis parameter for the event 2c.

# 14.2.1.4 Event 2d: The estimated quality of the currently used frequency is below a certain threshold

A UE shall be able to perform this measurement and the corresponding event reporting without requiring compressed mode.

When an inter-frequency measurement configuring event 2d is set up, the UE shall:

- 1> create a variable TRIGGERED\_2D\_EVENT related to that measurement, which shall initially be set to FALSE;
- 1> delete this variable when the measurement is released.

When event 2d is configured in the UE within a measurement, the UE shall:

- 1> if equation 1 below has been fulfilled for the used frequency during the time "Time to trigger":
  - 2> if the variable TRIGGERED\_2D\_EVENT is set to FALSE:
    - 3> set the variable TRIGGERED\_2D\_EVENT to TRUE;

- 3> send a measurement report with IEs set as below:
  - 4> set in "inter-frequency event results": "inter-frequency event identity" to "2d" and no IE "Inter-frequency cells", not taking into account the cell individual offset;
  - 4> include in IE "Inter-frequency measured results list" the measured results for the used frequency, not taking into account the cell individual offset;
  - 4> set the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset.
- 1> if the variable TRIGGERED 2D EVENT is set to TRUE and if equation 2 is fulfilled for the used frequency:
  - 2> set the variable TRIGGERED\_2D\_EVENT to FALSE.

Equation 1:

$$Q_{lsed} \leq T_{llsedd} - H_{2d}/2$$

The variables in the formula are defined as follows:

 $Q_{Used}$  is the quality estimate of the used frequency.

 $T_{Used\ 2d}$  is the absolute threshold that applies for the used frequency and event 2d.

 $H_{2d}$  is the hysteresis parameter for the event 2d.

Leaving triggered state condition:

Equation 2:

$$Q_{lsed} > T_{llsedd} + H_{2d}/2$$

The variables in the formula are defined as follows:

 $Q_{Used}$  is the quality estimate of the used frequency.

 $T_{Used\ 2d}$  is the absolute threshold that applies for the used frequency and event 2d.

 $H_{2d}$  is the hysteresis parameter for the event 2d.

# 14.2.1.5 Event 2e: The estimated quality of a non-used frequency is below a certain threshold

When an inter-frequency measurement configuring event 2e is set up, the UE shall:

- 1> create a variable TRIGGERED\_2E\_EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 2e is configured in the UE within a measurement, the UE shall:

- 1> if equation 1 below has been fulfilled for one or several non-used frequencies included for that event during the time "Time to trigger":
  - 2> if any of those non-used frequencies is not stored in the variable TRIGGERED\_2E\_EVENT:
    - 3> store the non-used frequencies that triggered the event and that were not previously stored in the variable TRIGGERED\_2E\_EVENT into that variable;
    - 3> send a measurement report with IEs set as below:
      - 4> set in "inter-frequency measurement event results":

- 5> "inter-frequency event identity" to "2e"; and
- 5> for each non-used frequency that triggered the event, beginning with the best frequency:
  - 6> "Frequency info" to that non-used frequency; and
  - 6> "Non frequency related measurement event results" to the "Primary CPICH info" of the best primary CPICH for FDD cells or "Primary CCPCH info" to the "Cell parameters ID" of the best primary CCPCH for TDD cells on that non-used frequency, not taking into account the cell individual offset.
  - 4> include in the IE "Inter-frequency measured results list" the measured results for each non-used frequency that triggered the event, not taking into account the cell individual offset;
- 4> set the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset.
- 1> if equation 2 below is fulfilled for a non-used frequency stored in the variable TRIGGERED\_2E\_EVENT:
  - 2> remove that non-used frequency from the variable TRIGGERED\_2E\_EVENT.

Equation 1:

$$Q_{Nonused} \leq T_{Nonusede} - H_{2e}/2$$

The variables in the formula are defined as follows:

 $Q_{Non used}$  is the quality estimate of a non-used frequency that becomes worse than an absolute threshold.

 $T_{Non \, used \, 2e}$  is the absolute threshold that applies for that non-used frequency for that event.

 $H_{2e}$  is the hysteresis parameter for the event 2e.

Leaving triggered state condition:

Equation 2:

$$Q_{Nonused} > T_{Nonused} + H_{2e}/2$$

The variables in the formula are defined as follows:

Q<sub>Non used</sub> is the quality estimate of a non-used frequency stored in the variable TRIGGERED\_2E\_EVENT.

 $T_{Non \, used \, 2e}$  is the absolute threshold that applies for that non-used frequency for that event.

 $H_{2e}$  is the hysteresis parameter for the event 2e.

# 14.2.1.6 Event 2 f: The estimated quality of the currently used frequency is above a certain threshold

A UE shall be able to perform this measurement and the corresponding event reporting without requiring compressed mode.

When an inter-frequency measurement configuring event 2f is set up, the UE shall:

- 1> create a variable TRIGGERED\_2F\_EVENT related to that measurement, which shall initially be set to FALSE;
- 1> delete this variable when the measurement is released.

When event 2f is configured in the UE within a measurement, the UE shall:

- 1> if equation 1 below has been fulfilled for the used frequency during the time "Time to trigger":
  - 2> if the variable TRIGGERED\_2F\_EVENT is set to FALSE:

- 3> set the variable TRIGGERED\_2F\_EVENT to TRUE;
- 3> send a measurement report with IEs set as below:
  - 4> set in "inter-frequency event results": "inter-frequency event identity" to "2f", and no IE "Inter-frequency cells";
  - 4> include in IE "Inter-frequency measured results list" the measured results for the used frequency, not taking into account the cell individual offset;
  - 4> set the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset.
- 1> if the variable TRIGGERED\_2F\_EVENT is set to TRUE and if equation 2 is fulfilled for the used frequency:
  - 2> set the variable TRIGGERED\_2F\_EVENT to FALSE.

Equation 1:

$$Q_{Used} \ge T_{Used} + H_{2f}/2$$

The variables in the formula are defined as follows:

 $Q_{Used}$  is the quality estimate of the used frequency.

 $T_{Used\ 2f}$  is the absolute threshold that applies for the used frequency and event 2f.

 $H_{2f}$  is the hysteresis parameter for the event 2f.

Leaving triggered state condition:

Equation 2:

$$Q_{U_{Sed}} < T_{U_{Sed}} - H_{2f}/2$$

The variables in the formula are defined as follows:

 $Q_{Used}$  is the quality estimate of the used frequency.

 $T_{Used\ 2f}$  is the absolute threshold that applies for the used frequency and event 2f.

 $H_{2f}$  is the hysteresis parameter for the event 2f.

### 14.3 Inter-RAT measurements

### 14.3.0a Inter-RAT measurement quantities

A measurement quantity is used by the UE to evaluate whether an inter-RAT measurement event has occurred or not.

The measurement quantity for UTRAN is used to compute the frequency quality estimate for the active set, as described in the next subclause, and can be:

- 1 Downlink Ec/No.
- 2 Downlink received signal code power (RSCP) after despreading.

The measurement quantity for GSM can be:

1 GSM Carrier RSSI

A description of those values can be found in [7] and [8].

# 14.3.0b Frequency quality estimate of the UTRAN frequency

The estimated quality of the active set in UTRAN in event 3a is defined as:

$$Q_{UTRAN} = 10 \cdot LogM_{UTRAN} = W \cdot 10 \cdot Log\left(\sum_{i=1}^{N_A} M_i\right) + (1 - W) \cdot 10 \cdot LogM_{Best},$$

The variables in the formula are defined as follows:

 $Q_{UTRAN}$  is the estimated quality of the active set on the currently used UTRAN frequency.

M<sub>UTRAN</sub> is the estimated quality of the active set on currently used UTRAN frequency expressed in another unit.

 $M_i$  is the measurement result of cell i in the active set, according to what is indicated in the IE "Measurement quantity for UTRAN quality estimate".

N<sub>A</sub> is the number of cells in the active set.

M<sub>Best</sub> is the measurement result of the cell in the active set with the highest measurement result.

W is a parameter sent from UTRAN to UE.

If the measurement result is CPICH-Ec/No  $M_{UTRAN}$ ,  $M_i$  and  $M_{Best}$  are expressed as ratios.

If the measurement result is CPICH-RSCP or PCCPCH-RSCP,  $M_{UTRAN}$ ,  $M_i$  and  $M_{Best}$  are expressed in mW.

# 14.3.0c Inter-RAT reporting quantities

The quantities that the UE shall report to UTRAN when the event is triggered for an inter-RAT measurement are given by the IE "Inter-RAT reporting quantity" stored for that measurement, and can be the following:

In the case the other RAT is GSM:

1 GSM carrier RSSI

A description of those values can be found in [7] and [8].

# 14.3.1 Inter-RAT reporting events

Within the measurement reporting criteria field in the MEASUREMENT CONTROL message the UTRAN notifies the UE which events should trigger the UE to send a MEASUREMENT REPORT message. The listed events are the toolbox from which the UTRAN can choose the reporting events that are needed for the implemented handover evaluation function, or other radio network functions.

All events are measured with respect to one of the measurement quantities given in subclause 14.3.0a, and of the frequency quality estimate given in subclause 14.3.0b. For UTRAN the measurement quantities are measured on the monitored primary common pilot channels (CPICH) in FDD mode and the monitored primary common control channels (PCCPCH) in TDD mode of the cell defined in the measurement object. For other RATs the measurement quantities are system-specific. A "used UTRAN frequency" is a frequency that the UE have been ordered to measure upon and is also currently used for the connection to UTRAN. "Other system" is e.g. GSM.

In the text below describing the events:

- "The BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement" shall be understood as the BCCH ARFCN and BSIC combinations of the inter-RAT cells pointed at in the IE "Cells for measurement" if it has been received for that inter-RAT measurement, or otherwise of the cells included in the "inter-RAT cell info" part of the variable CELL\_INFO LIST.
- "The BCCH ARFCNs considered in that inter-RAT measurement" shall be understood as the BCCH ARFCNs of
  the inter-RAT cells pointed at in the IE "Cells for measurement" if it has been received for that inter-RAT
  measurement, or otherwise of the cells included in the "inter-RAT cell info" part of the variable CELL\_INFO
  LIST.

When one inter-RAT measurement identity corresponds to multiple inter-RAT events with identical event identities, the UE behaviour is not specified.

14.3.1.1 Event 3a: The estimated quality of the currently used UTRAN frequency is below a certain threshold **and** the estimated quality of the other system is above a certain threshold.

When an inter-RAT measurement configuring event 3a is set up, the UE shall:

- 1> create a variable TRIGGERED 3A EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 3a is configured in the UE within a measurement, the UE shall:

- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
  - 2> if equations 1 and 2 below have both been fulfilled for a time period indicated by "Time to trigger" from the same instant, respectively for the used UTRAN frequency and for one or several GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
    - 3> if the Inter-RAT cell id of any of those GSM cells is not stored in the variable TRIGGERED\_3A\_EVENT:
      - 4> store the Inter-RAT cell ids of the GSM cells that triggered the event and that were not previously stored in the variable TRIGGERED\_3A\_EVENT into that variable.
      - 4> send a measurement report with IEs set as below:
        - 5> in "inter-RAT measurement event result": "inter-RAT event identity" to "3a", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (best one first), taking into account the cell individual offset of the GSM cells;
        - 5> "measured results" and possible "additional measured results" according to subclause 8.6.7.5 and 8.4.2, respectively, not taking into account the cell individual offset.
  - 2> if equation 4 is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED 3A EVENT:
    - 3> remove the inter-RAT cell id of that GSM cell from the variable TRIGGERED\_3A\_EVENT.
  - 2> if equation 3 is fulfilled for the used frequency in UTRAN:
    - 3> clear the variable TRIGGERED 3A EVENT.
- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
  - 2> if equations 1 and 2 below have been fulfilled for a time period indicated by "Time to trigger" from the same instant, respectively for the used UTRAN frequency and for one or several BCCH ARFCNs considered in that inter-RAT measurement:
    - 3> if any of those BCCH ARFCNs is not stored into the variable TRIGGERED\_3A\_EVENT:
      - 4> store the BCCH ARFCNs that triggered the event and that were not previously stored in the variable TRIGGERED\_3A\_EVENT into that variable;
      - 4> send a measurement report with IEs set as below:
        - 5> in "inter-RAT measurement event result": "inter-RAT event identity" to "3a", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFCNs that triggered the event (best one first), taking into account the cell individual offset of the GSM cells;
        - 5> "measured results" and possible "additional measured results" according to subclause 8.6.7.5 and 8.4.2, respectively, not taking into account the cell individual offset.
  - 2> if equation 4 is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED\_3A\_EVENT:

3> remove that BCCH ARFCN from the variable TRIGGERED\_3A\_EVENT.

2> if equation 3 is fulfilled for the used frequency in UTRAN:

3> clear the variable TRIGGERED\_3A\_EVENT.

Triggering conditions:

Equation 1:

$$Q_{U_{sad}} \leq T_{U_{sad}} - H_{3a}/2$$

The variables in the formula are defined as follows:

 $Q_{Used}$  is the quality estimate of the used UTRAN frequency.

 $T_{Used}$  is the absolute threshold that applies for the used frequency in that measurement.

 $H_{3a}$  is the hysteresis parameter for event 3a.

Equation 2:

$$M_{OtherRAT} + CIQ_{theRAT} \ge T_{OtherRAT} + H_{3a}/2$$

The variables in the formula are defined as follows:

 $M_{Other\ RAT}$  is the measurement quantity for the cell of the other system.

CIO<sub>Other RAT</sub> is the cell individual offset for the cell of the other system.

 $T_{Other\,RAT}$  is the absolute threshold that applies for the other system in that measurement.

 $H_{3a}$  is the hysteresis parameter for event 3a.

Leaving triggered state conditions:

Equation 3:

$$Q_{lsed} > T_{llsed} + H_{3d}/2$$

The variables in the formula are defined as follows:

 $Q_{Used}$  is the quality estimate of the used UTRAN frequency.

 $T_{Used}$  is the absolute threshold that applies for the used frequency in that measurement.

 $H_{3a}$  is the hysteresis parameter for event 3a.

Equation 4:

$$M_{OtherRAT} + CIQ_{theRAT} < T_{OtherRAT} - H_{3a}/2$$

The variables in the formula are defined as follows:

 $M_{Other\,RAT}$  is the measurement quantity for the cell of the other system.  $M_{Other\,RAT}$  is expressed in dBm.

CIO<sub>Other RAT</sub> is the cell individual offset for the cell of the other system.

 $T_{Other\,RAT}$  is the absolute threshold that applies for the other system in that measurement.

 $H_{3a}$  is the hysteresis parameter for event 3a.

### 14.3.1.2 Event 3b: The estimated quality of other system is below a certain threshold

When an inter-RAT measurement configuring event 3b is set up, the UE shall:

- 1> create a variable TRIGGERED\_3B\_EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 3b is configured in the UE within a measurement, the UE shall:

- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
  - 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one or several GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
    - 3> if the inter-RAT cell id of any of those GSM cell is not stored in the variable TRIGGERED 3B EVENT:
      - 4> store the inter-RAT cell ids of the GSM cells that triggered the event and that were not previously stored in the variable TRIGGERED\_3B\_EVENT into that variable;
      - 4> send a measurement report with IEs set as below:
        - 5> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3b", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (worst one first), taking into account the cell individual offset of the GSM cells;
        - 5> set the IE "measured results" and the IE "additional measured results" according to subclause 8.6.7.5 and 8.4.2, respectively, not taking into account the cell individual offset.
  - 2> if equation 2 below is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED\_3B\_EVENT:
    - 3> remove the inter-RAT cell id of that GSM cell from the variable TRIGGERED\_3B\_EVENT.
- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
  - 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one or several of the BCCH ARFCNs considered in that inter-RAT measurement:
    - 3> if any of those BCCH ARFCN is not stored into the variable TRIGGERED\_3B\_EVENT:
      - 4> store the BCCH ARFCNs that triggered the event and that were not previously stored in the variable TRIGGERED\_3B\_EVENT into that variable;
      - 4> send a measurement report with IEs set as below:
        - 5> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3b", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFCNs that triggered the event (worst one first), taking into account the cell individual offset of the GSM cells;
        - 5> set the IE "measured results" and the IE "additional measured results" according to subclause 8.6.7.5 and 8.4.2, respectively, not taking into account the cell individual offset.
  - 2> if equation 2 below is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED\_3B\_EVENT:
    - 3> remove that BCCH ARFCN from the variable TRIGGERED\_3B\_EVENT.

Triggering condition:

Equation 1:

$$M_{OtherRAT} + CIQ_{therRAT} \leq T_{OtherRAT} - H_{3b}/2$$

The variables in the formula are defined as follows:

 $M_{Other\ RAT}$  is the measurement quantity for the cell of the other system.

CIO<sub>Other RAT</sub> is the cell individual offset for the cell of the other system.

 $T_{Other\,RAT}$  is the absolute threshold that applies for the other system in that measurement.

 $H_{3b}$  is the hysteresis parameter for event 3b.

Leaving triggered state condition:

Equation 2:

$$M_{OtherRAT} + CIQ_{therRAT} > T_{OtherRAT} + H_{3b}/2$$

The variables in the formula are defined as follows:

 $M_{Other\ RAT}$  is the measurement quantity for the cell of the other system.  $M_{Other\ RAT}$  is expressed in dBm.

CIO<sub>Other RAT</sub> is the cell individual offset for the cell of the other system.

 $T_{Other\,RAT}$  is the absolute threshold that applies for the other system in that measurement.

 $H_{3b}$  is the hysteresis parameter for event 3b.

### 14.3.1.3 Event 3c: The estimated quality of other system is above a certain threshold

When an inter-RAT measurement configuring event 3c is set up, the UE shall:

- 1> create a variable TRIGGERED\_3C\_EVENT related to that measurement, which shall initially be empty;
- 1> delete this variable when the measurement is released.

When event 3c is configured in the UE within a measurement, the UE shall:

- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
  - 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one or several GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
    - 3> if the inter-RAT cell id of any of those GSM cell is not stored in the variable TRIGGERED\_3C\_EVENT:
      - 4> store the Inter-RAT cell ids of the GSM cells that triggered the event and that were not previously stored in the variable TRIGGERED\_3C\_EVENT into that variable;
      - 4> send a measurement report with IEs set as below:
        - 5> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3c", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cells that triggered the event (best one first), taking into account the cell individual offset of the GSM cells;
        - 5> set the IE "measured results" and the IE "additional measured results" according to subclause 8.6.7.5 and 8.4.2, respectively, not taking into account the cell individual offset.
  - 2> if equation 2 below is fulfilled for a GSM cell whose inter-RAT cell id is stored in the variable TRIGGERED\_3C\_EVENT:
    - 3> remove the inter-RAT cell id of that GSM cell from the variable TRIGGERED\_3C\_EVENT.
- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
  - 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one or several of the BCCH ARFCNs considered in that inter-RAT measurement:
    - 3> if any of those BCCH ARFCN is not stored into the variable TRIGGERED 3C EVENT:
      - 4> store the BCCH ARFCNs that triggered the event and that were not previously stored in the variable TRIGGERED\_3C\_EVENT into that variable;
      - 4> send a measurement report with IEs set as below:

- 5> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3c", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to BCCH ARFCNs that triggered the event (best one first), taking into account the cell individual offset of the GSM cells;
- 5> set the IE "measured results" and the IE "additional measured results" according to subclause 8.6.7.5 and 8.4.2, respectively, not taking into account the cell individual offset.
- 2> if equation 2 is fulfilled for a BCCH ARFCN that is stored in the variable TRIGGERED\_3C\_EVENT:
  - 3> remove that BCCH ARFCN from the variable TRIGGERED\_3C\_EVENT.

Equation 1:

$$M_{OtherRAT} + CIQ_{therRAT} \ge T_{OtherRAT} + H_{\chi}/2$$

The variables in the formula are defined as follows:

 $M_{Other\ RAT}$  is the measurement quantity for the cell of the other system.  $M_{Other\ RAT}$  is expressed in dBm.

CIO<sub>Other RAT</sub> is the cell individual offset for the cell of the other system.

 $T_{Other\,RAT}$  is the absolute threshold that applies for the other system in that measurement.

 $H_{3c}$  is the hysteresis parameter for event 3c.

Leaving triggered state condition:

Equation 2:

$$M_{OtherRAT} + CIQ_{therRAT} < T_{OtherRAT} - H_{\infty}/2$$

The variables in the formula are defined as follows:

 $M_{Other\ RAT}$  is the measurement quantity for the cell of the other system.  $M_{Other\ RAT}$  is expressed in dBm.

 $CIO_{Other\ RAT}$  is the cell individual offset for the cell of the other system.

 $T_{Other\,RAT}$  is the absolute threshold that applies for the other system in that measurement.

 $H_{3c}$  is the hysteresis parameter for event 3c.

### 14.3.1.4 Event 3d: Change of best cell in other system

When an inter-RAT measurement configuring event 3d is set up, the UE shall:

- 1> create a variable BEST\_CELL\_3D\_EVENT related to that measurement;
- 1> delete this variable when the measurement is released.

When event 3d is configured in the UE within a measurement, the UE shall:

- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "required":
  - 2> when the measurement is initiated or resumed:
    - 3> store in the variable BEST\_CELL\_3D\_EVENT the Inter-RAT cell id of the GSM cell that has the best measured quantity among the GSM cells that match any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement, not taking into account the cell individual offset of the GSM cells;
    - 3> send a measurement report with IE set as below:

- 4> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cell that is stored in the variable BEST\_CELL\_3D\_EVENT;
- 4> set the IE "measured results" and the IE "additional measured results" according to subclause 8.6.7.5 and 8.4.2, respectively, not taking into account the cell individual offset.
- 2> if equation 1 has been fulfilled for a time period indicated by "time to trigger" for a GSM cell that is different from the one stored in BEST\_CELL\_3D\_EVENT and that matches any of the BCCH ARFCN and BSIC combinations considered in that inter-RAT measurement:
  - 3> store the Inter-RAT cell id of that GSM cell in the variable BEST\_CELL\_3D\_EVENT;
  - 3> send a measurement report with IEs set as below:
    - 4> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "verified BSIC" and "Inter-RAT cell id" to the GSM cell is now stored in BEST\_CELL\_3D\_EVENT;
    - 4> set the IE "measured results" and the IE "additional measured results" according to subclause 8.6.7.5 and 8.4.2, respectively, not taking into account the cell individual offset.
- 1> if the other RAT is GSM, and if IE "BSIC verification required" is set to "not required":
  - 2> when the measurement is initiated or resumed:
    - 3> store in the variable BEST\_CELL\_3D\_EVENT the BCCH ARFCN of the GSM cell that has the best measured quantity among the BCCH ARFCNs considered in that inter-RAT measurement;
    - 3> send a measurement report with IE set as below:
      - 4> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to the BCH ARFCN that is stored in the variable BEST\_CELL\_3D\_EVENT;
      - 4> set the IE "measured results" and the IE "additional measured results" according to subclause 8.6.7.5 and 8.4.2, respectively, not taking into account the cell individual offset.
  - 2> if equation 1 below has been fulfilled for a time period indicated by "time to trigger" for one of the BCCH ARFCNs considered in that inter-RAT measurement and different from the one stored in BEST\_CELL\_3D\_EVENT:
    - 3> store the BCCH ARFCN of that GSM cell in the variable BEST\_CELL\_3D\_EVENT;
    - 3> send a measurement report with IEs set as below:
      - 4> set in "inter-RAT measurement event result": "inter-RAT event identity" to "3d", "CHOICE BSIC" to "non verified BSIC" and "BCCH ARFCN" to the BCCH ARFCN that is now stored in the variable BEST CELL 3D EVENT;
      - 4> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2, not taking into account the cell individual offset.

#### Equation 1:

$$M_{Nov} \ge M_{Rost} + H_{3d}/2$$

The variables in the formula are defined as follows:

 $M_{New}$  is the measurement quantity for a GSM cell that is not stored in the variable BEST\_CELL\_3D\_EVENT.

 $M_{Best}$  is the measurement quantity for a GSM cell that is stored in the variable BEST\_CELL\_3D\_EVENT.

 $H_{3d}$  is the hysteresis parameter for event 3d.

# 14.3.2 GSM measurements in compressed mode

#### 14.3.2.1 GSM RSSI measurements

The UE shall perform GSM RSSI measurements in the gaps of compressed mode pattern sequence specified for GSM RSSI measurement purpose.

### 14.3.2.2 Initial BSIC identification

The UE shall perform Initial BSIC identification in compressed mode pattern sequence specified for Initial BSIC identification measurement purpose.

The parameter "N identify abort" in the IE "DPCH compressed mode info" indicates the maximum number of patterns that the UE shall use to attempt to decode the unknown BSIC of the GSM cell in the initial BSIC identification procedure.

The BSIC identification procedure is defined in detail in [19].

#### 14.3.2.3 BSIC re-confirmation

The UE shall perform BSIC re-confirmation in compressed mode pattern sequence specified for BSIC re-confirmation measurement purpose.

The parameter "T reconfirm abort" in the IE "DPCH compressed mode info" indicates the maximum time allowed for the re-confirmation of the BSIC of one GSM cell in the BSIC re-confirmation procedure.

The BSIC re-confirmation procedure is defined in detail in [19].

# 14.4 Traffic Volume Measurements

# 14.4.1 Traffic Volume Measurement Quantity

Traffic volume measurements may be configured by RRC to assist with dynamic radio bearer control. The reported quantities that can be configured are:

- 1 Buffer Occupancy.
- 2 Average of Buffer Occupancy.
- 3 Variance of Buffer Occupancy.

A description of these values can be found in [15].

When a report is triggered, the UE shall provide the requested quantities for the acknowledged and unacknowledged mode RBs mapped onto the transport channels identified.

When the RLC buffer payload, Average of RLC buffer payload or Variance of RLC buffer payload is reported, the measured quantity shall be rounded upwards to the closest higher value possible to report. When the measured quantity is over the highest value possible to report, it shall be set to the highest value.

# 14.4.2 Traffic Volume reporting triggers

Traffic volume measurement reports can be triggered using two different mechanisms, periodical and event triggered. The reporting criteria are specified in the measurement control message.

All the specified events are evaluated with respect to the Transport Channel Traffic Volume (TCTV). This quantity is equal to the sum of the Buffer Occupancy for all logical channels mapped onto a transport channel. The events on a given transport channel shall be evaluated at least at every TTI (may be more often) as described in [15].

When one traffic volume measurement identity corresponds to multiple traffic volume events with identical event identities for the same transport channel, the UE behaviour is not specified.

When a traffic volume measurement is set up, the UE shall:

- 1> if the IE "report criteria" is set to "Traffic volume measurement reporting criteria":
  - 2> for each IE "Parameters sent for each transport channel":
    - 3> if the IE "Uplink transport channel type" is not included; or
    - 3> if the IE "Uplink Transport Channel Type" has the value "DCH" or "USCH" and the IE "UL transport channel id" is not included:
      - 4> for each IE "Parameters required for each Event":
        - 5> for each uplink transport channel on which the UE is supposed to report (see below):
          - 6> configure an event trigger defined by the values in the IEs "Measurement Identity", "Traffic volume event identity", "Reporting threshold", "Time to trigger", "Pending time after trigger" and "Tx Interruption after trigger".

#### 3> else:

- 4> for each IE "Parameters required for each Event":
  - 5> for the uplink transport channel defined by the IEs "Uplink transport channel type" and "UL transport channel id":
    - 6> configure an event trigger defined by the values in the IEs "Measurement Identity", "Traffic volume event identity", "Reporting threshold", "Time to trigger", "Pending time after trigger" and "Tx Interruption after trigger".

#### 1> else:

- 2> if the IE "report criteria" is set to "Periodical reporting criteria":
  - 2> configure periodical triggers with period equal to the value in the IE "Reporting Interval" and with number of transmissions equal to the value in the IE "Amount of reporting" for the measurement identified by the IE "Measurement Identity".

For each transport channel for which an event trigger has been configured, the UE shall:

- 1> for each event configured for this transport channel:
  - 2> if the TCTV is larger than the threshold in IE "Reporting threshold" at TVM setup or modify; or
  - 2> if the TCTV becomes larger than the threshold in IE "Reporting threshold" while the event is configured:
    - 3> if the IE "Traffic volume event identity" has value "4a":
      - 4> if the IE "Time to trigger" is not present; and
      - 4> if the Pending-time-after-trigger timer for this event is not active:
        - 5> if the IE "Pending time after trigger" is included:
          - 6> start the Pending-time-after-trigger timer for this event with the value in this IE.
        - 5> trigger a report for the measurement identified by the IE "Measurement Identity".
      - 4> else:
        - 5> start the Time-to-trigger timer for this event with the value in the IE "Time to trigger".
    - 3> if the IE "Traffic volume event identity" has value "4b":
      - 4> if the Time-to-trigger timer for this event is active:
        - 5> stop this timer.

- 2> if the TCTV is smaller than the threshold in IE "Reporting threshold" at TVM setup or modify; or
- 2> if the TCTV becomes smaller than the threshold in IE "Reporting threshold" while the event is configured:
  - 3> if the IE "Traffic volume event identity" has value "4a":
    - 4> if the Time-to-trigger timer for this event is active:
      - 5> stop this timer.
  - 3> if the IE "Traffic volume event identity" has value "4b":
    - 4> if the IE "Time to trigger" is not present; and
    - 4> if the Pending-time-after-trigger timer for this event is not active:
      - 5> if the IE "Pending time after trigger" is included:
        - 6> start the Pending-time-after-trigger timer for this event with the value in this IE.
      - 5> trigger a report for the measurement identified by the IE "Measurement Identity".
    - 4> else:
      - 5> start the Time-to-trigger timer for this event with the value in the IE "Time to trigger".

#### When the Time-to-trigger timer for an event elapses:

- 1> if the Pending-time-after-trigger timer for this event is not active:
  - 2> trigger a report for the measurement identified by the IE "Measurement Identity" corresponding to this event;
  - 2> if the IE "Pending time after trigger" is included:
    - 3> start the Pending-time-after-trigger timer for this event with the value in this IE.

### When the Pending-time-after-trigger for an event elapses:

- 1> if the IE "Traffic volume event identity" has value "4a":
  - 2> if the TCTV is larger than the threshold in IE "Reporting threshold":
    - 3> if the IE "Time to trigger" is not present:
      - 4> trigger a report for the measurement identified by the IE "Measurement Identity" corresponding to this event;
      - 4> start the Pending-time-after-trigger timer for this event with the value in the IE "Pending time after trigger".
    - 3> else:
      - 4> start the Time-to-trigger timer for this event with the value in the IE "Time to trigger".
- 1> if the IE "Traffic volume event identity" has value "4b":
  - 2> if the TCTV is smaller than the threshold in IE "Reporting threshold":
    - 3> if the IE "Time to trigger" is not present:
      - 4> trigger a report for the measurement identified by the IE "Measurement Identity" corresponding to this event:
      - 4> start the Pending-time-after-trigger timer for this event with the value in the IE "Pending time after trigger".
    - 3> else:
      - 4> start the Time-to-trigger timer for this event with the value in the IE "Time to trigger".

When a periodical trigger elapses, the UE shall:

- 1> trigger a report for the measurement identified by the IE "Measurement Identity";
- 1> if the number of reports triggered by this periodical trigger reaches the value in the IE "Amount of reporting":
  - 2> disable this periodical trigger.

When a report is triggered for a given IE "Measurement Identity", the UE shall:

- 1> consider the variable MEASUREMENT\_IDENTITY corresponding to this measurement identity;
- 1> if the report is triggered by an event trigger:
  - 2> include the IE "Event results";
  - 2> set the IE "Uplink transport channel type causing the event" to the type of the transport channel which triggered the report;
  - 2> if the transport channel type is "DCH" or "USCH":
    - 3> include the IE "UL Transport Channel identity" and set it to the identity of the transport channel which triggered the report.
  - 2> else:
    - 3> not include the IE "UL Transport Channel identity".
  - 2> set the IE "Traffic volume event identity" to the identity of the event that triggered the report;
  - 2> if the IE "Tx interruption after trigger" for the event that triggered the report is included:
    - 3> if the UE is in CELL FACH state:
      - 4> prohibit DTCH transmissions on the RACH;
      - 4> if the Tx interruption timer is not running; or
      - 4> if the Tx interruption timer is running and still has a value larger than the IE "Tx interruption after trigger" for the event, i.e. it was started earlier by another event with a larger value in IE "Tx interruption after trigger":
        - 5> start the Tx interruption timer with the value in the IE "Tx interruption after trigger" for this event.
      - 4> when it receives from the UTRAN a message causing the transition to CELL\_DCH state; or
      - 4> when the Tx interruption timer elapses:
        - 5> stop the timer;
        - 5> resume these transmissions.
- 1> if the IE "Traffic volume measurement object" is not included:
  - 2> report on all the uplink transport channels as specified below.
- 1> if the IE "Traffic volume measurement object" is included:
  - 2> report on the uplink transport channels identified in this IE as specified below.
- 1> for each UM or AM RB mapped onto a transport channel on which the UE is expected to report:
  - 2> add an element in the IE "Traffic volume measurement results";
  - 2> set the value of the IE "RB Identity" to the identity of the considered radio bearer;
  - 2> if the RB is mapped onto one logical channel:
    - 3> if the IE "RLC Buffer Payload for each RB" is set to TRUE:

- 4> include the IE "RLC Buffers Payload" and set it to the Buffer Occupancy value for this logical channel, rounded up to the next allowed value.
- 3> if the IE "Average of RLC Buffer Payload for each RB" is set to TRUE:
  - 4> include and set the IE "Average of RLC Buffer Payload" to the Buffer Occupancy for this logical channel averaged over the interval specified in the IE "Time Interval to take an average or a variance" (see [15]), rounded up to the next allowed value.
- 3> if the IE "Variance of RLC Buffer Payload for each RB" is set to TRUE:
  - 4> include and set the IE "Variance of RLC Buffer Payload" to the variance of the Buffer Occupancy for this logical channel computed over the interval specified in the IE "Time Interval to take an average or a variance" (see [15]), rounded up to the next allowed value.
- 2> if the RB is mapped onto two logical channels:
  - 3> if one logical channel is mapped onto transport channels on which the UE is supposed to report:
    - 4> if the IE "RLC Buffer Payload for each RB" is set to TRUE:
      - 5> include and set the IE "RLC Buffers Payload" to the Buffer Occupancy value for this logical channel, rounded up to the next allowed value.
    - 4> if the IE "Average of RLC Buffer Payload for each RB" is set to TRUE:
      - 5> include and set the IE "Average of RLC Buffer Payload" to the Buffer Occupancy for this logical channel averaged over the interval specified in the IE "Time Interval to take an average or a variance" (see [15]), rounded up to the next allowed value.
    - 4> if the IE "Variance of RLC Buffer Payload for each RB" is set to TRUE:
      - 5> include and set the IE "Variance of RLC Buffer Payload" to the variance of the Buffer Occupancy for this logical channel computed over the interval specified in the IE "Time Interval to take an average or a variance" (see [15]), rounded up to the next allowed value.
  - 3> if both logical channels are mapped onto transport channels on which the UE is supposed to report:
    - 4> if the IE "RLC Buffer Payload for each RB" is set to TRUE:
      - 5> include and set the IE "RLC Buffers Payload" to the sum of the Buffer Occupancy values for the two logical channels, rounded up to the next allowed value.
    - 4> if the IE "Average of RLC Buffer Payload for each RB" is set to TRUE:
      - 5> include and set the IE "Average of RLC Buffer Payload" to the sum of the Buffer Occupancy for the two logical channels averaged over the interval specified in the IE "Time Interval to take an average or a variance" (see [15]) and rounded up to the next allowed value.
    - 4> if the IE "Variance of RLC Buffer Payload for each RB" is set to TRUE:
      - 5> include and set the IE "Variance of RLC Buffer Payload" to the variance of the sum of the Buffer Occupancy for the two logical channels, computed over the interval specified in the IE "Time Interval to take an average or a variance" (see [15]) and rounded up to the next allowed value.

## 14.4.2.1 Reporting event 4 A: Transport Channel Traffic Volume becomes larger than an absolute threshold

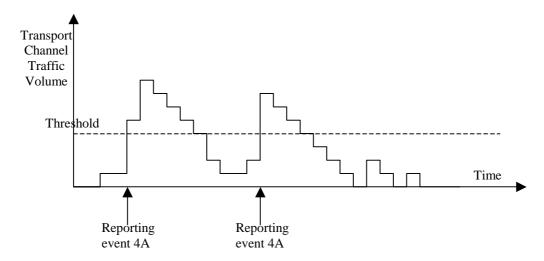


Figure 14.4.2.1-1: Event triggered report when Transport Channel Traffic Volume becomes larger than a certain threshold

If the monitored Transport Channel Traffic Volume (TCTV) [15] is larger than an absolute threshold at TVM setup or modify, or is larger at activation of the monitored transport channel, or becomes larger than an absolute threshold while the event is configured i.e. if TCTV>Reporting threshold, this event could trigger a report. The event could be triggered again only if TCTV becomes smaller than the Reporting threshold and later TCTV>Reporting threshold is verified again.

## 14.4.2.2 Reporting event 4 B: Transport Channel Traffic Volume becomes smaller than an absolute threshold

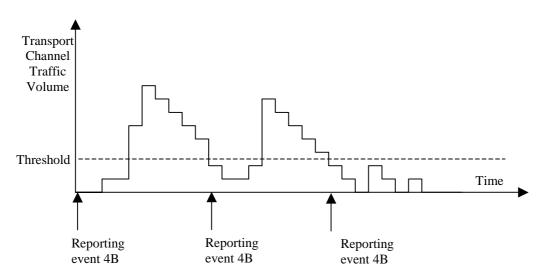


Figure 14.4.2.1-2: Event triggered report when Transport Channel Traffic Volume becomes smaller than certain threshold

If the monitored Transport Channel Traffic Volume (TCTV) [15] is smaller than an absolute threshold at TVM setup or modify, or is smaller at activation of the monitored transport channel, or becomes smaller than an absolute threshold while the event is configured i.e. if TCTV<Reporting threshold, this event could trigger a report. The event could be triggered again only if TCTV becomes bigger than the Reporting threshold and later TCTV<Reporting threshold is verified again.

### 14.4.3 Traffic volume reporting mechanisms

Traffic volume measurement triggering could be associated with both a *time-to-trigger* and a *pending time after trigger*. The time-to-trigger is used to get time domain hysteresis, i.e. the condition must be fulfilled during the time-to-trigger time before a report is sent. Pending time after trigger is used to limit consecutive reports when one traffic volume measurement report already has been sent and enables periodic reporting while the TCTV remains above(4a) or below(4b) the threshold. This is described in detail below.

#### 14.4.3.1 Pending time after trigger

This timer is started in the UE when a measurement report has been triggered by a given event. The UE is then forbidden to send new measurement reports triggered by the same event during this time period. Instead the UE waits until the timer has expired. If the Transport Channel Traffic Volume [15] is still above the threshold for event 4a, or below the threshold for event 4b when the timer expires, the UE sends a new measurement report, and the timer is restarted. Otherwise it waits for a new triggering.

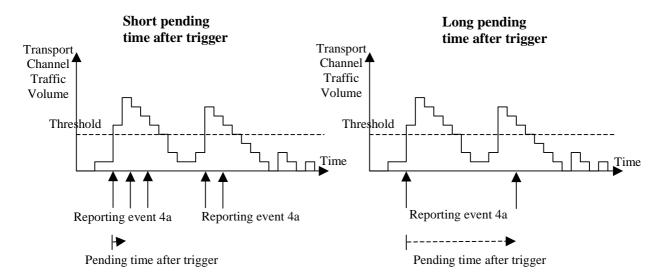


Figure 14.4.3.1-1: Pending time after trigger limits the amount of consecutive measurement reports

Figure 14.4.3.1-1 shows that by increasing the pending time after trigger a triggered second event does not result in a measurement report. The figure assumes absence of the IE "Time to trigger".

#### 14.4.3.2 Time-to-trigger

The timer is started in the UE when the Transport Channel Traffic Volume triggers the event. If the TCTV crosses the threshold before the timer expires, the timer is stopped. If the timer expires then a report is triggered.

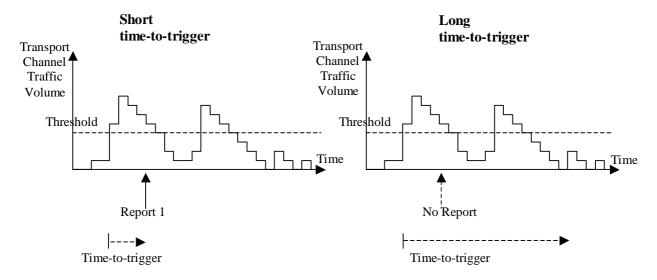


Figure 14.4.3.1-2: Time-to-trigger is used to achieve time hysteresis

Figure 14.4.3.1-2 shows that by increasing the time-to-trigger the report is not triggered.

### 14.4.4 Interruption of user data transmission

By including the IE "Tx Interruption after trigger", a UE in CELL\_FACH state may be instructed by the UTRAN to prohibit transmission of user data on the RACH temporarily after a measurement report has been triggered.

The UE shall only resume transmission of user data, when:

- 1> it receives from the UTRAN a message allocating a dedicated physical channel, leading to the transition to CELL\_DCH state; or
- 1> the time period indicated by the IE "Tx Interruption after trigger" elapses.

The transmission on signalling radio bearers shall not be interrupted.

## 14.5 Quality Measurements

## 14.5.1 Quality reporting measurement quantities

For quality measurements, the following measurement quantities are used:

- 1. Downlink transport channel BLER
- 2. Timeslot SIR (TDD only)

## 14.5.2 Quality reporting events

When one measurement identity corresponds to multiple quality events for the same transport channel, the UE behaviour is not specified.

#### 14.5.2.1 Reporting event 5A: A predefined number of bad CRCs is exceeded

When this event is ordered by UTRAN in a measurement control message, the UE shall send a measurement report when the amount of bad CRCs during a predefined sliding window exceeds a predefined number.

The following three parameters are used in the scheme:

- Total CRC = the length of the sliding window over which the number of bad CRCs are counted.

- **Bad CRC** = the number of bad CRC that is required within the latest "Total CRC" received CRCs for the event to be triggered.
- **Pending after trigger** = a new event can not be triggered until "Pending after trigger" CRCs have been received,

When a DCH is established, the UE shall begin to count the number of bad CRCs within the last "Total CRC" received CRCs. No event can be triggered until at least "Total CRC" CRCs have been received. For each new received CRC, the UE shall compare the number of bad CRCs within the latest "Total CRC" received CRCs with the parameter "Bad CRC". An event shall be triggered if the number of bad CRCs is equal or larger than "Bad CRC".

At the time when the event is triggered a pending time after trigger timer is started with the length of "Pending after trigger" CRCs. A new event can not be triggered until Pending after trigger" CRCs have been received. When Pending after trigger" CRCs have been received the event evaluation start again and a new event can be triggered.

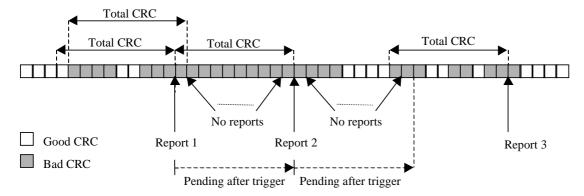


Figure 14.5.2.1-1: Event triggered CRC error reporting

#### 14.6 UE internal measurements

#### 14.6.1 UE internal measurement quantities

For UE internal measurements the following measurement quantities exist:

- 1. UE transmission (Tx) power, for TDD measured on a timeslot basis.
- 2. UE received signal strength power (RSSI).
- 3. UE Rx-Tx time difference (FDD only).
- 4. T<sub>ADV</sub> (1.28 Mcps TDD).

### 14.6.2 UE internal measurement reporting events

In the Measurement reporting criteria field in the Measurement Control messages, the UTRAN notifies the UE of which events should trigger a measurement report. UE internal measurement reporting events that can trigger a report are given below. The reporting events are marked with vertical arrows in the figures below. All events can be combined with time-to-trigger.

NOTE: The reporting events are numbered 6A, 6B, 6C,.. where 6 denotes that the event belongs to the type UE internal measurements.

When one measurement identity corresponds to multiple internal events with identical event identities, the UE behaviour is not defined.

## 14.6.2.1 Reporting event 6A: The UE Tx power becomes larger than an absolute threshold

When a UE internal measurement configuring event 6a is set up, the UE shall:

- 1> create a variable TRIGGERED\_6A\_EVENT related to that measurement, which shall initially be set to FALSE;
- 1> delete this variable when the measurement is released.

When this event is ordered by UTRAN in a measurement control message, the UE shall:

- 1> if the UE Tx power (for TDD within a single TS) is greater than the value in IE "UE Transmitted Power Tx power threshold" stored for this event in the variable MEASUREMENT\_IDENTITY for a time period indicated by the IE "time\_to\_trigger":
  - 2> if the variable TRIGGERED\_6A\_EVENT is set to FALSE:
    - 3> set the variable TRIGGERED\_6A\_EVENT to TRUE;
    - 3> send a measurement report with IEs set as below:
      - 4> set in "UE internal measurement event results": "UE internal event identity" to "6a";
      - 4> set the IE "measured results" and the IE "additional measured results" according to 8.4.2.
- 1> if the variable TRIGGERED\_6A\_EVENT is set to TRUE and if the UE Tx power (for TDD within a single TS) is less or equal the value in IE "UE Transmitted Power Tx power threshold" stored for this event in the variable MEASUREMENT\_IDENTITY:
  - 2> set the variable TRIGGERED\_6A\_EVENT to FALSE.

## 14.6.2.2 Reporting event 6B: The UE Tx power becomes less than an absolute threshold

When a UE internal measurement configuring event 6b is set up, the UE shall:

- 1> create a variable TRIGGERED 6B EVENT related to that measurement, which shall initially be set to FALSE;
- 1> delete this variable when the measurement is released.

- 1> if the UE Tx power (for TDD within a single TS) is less than the value in IE "UE Transmitted Power Tx power threshold" stored for this event in the variable MEASUREMENT\_IDENTITY for a time period indicated by the IE "time\_to\_trigger":
  - 2> if the variable TRIGGERED\_6B\_EVENT is set to FALSE:
    - 3> set the variable TRIGGERED\_6B\_EVENT to TRUE;
    - 3> send a measurement report with IEs set as below:
      - 4> set in "UE internal measurement event results": "UE internal event identity" to "6b";
      - 4> set the IE "measured results" and the IE "additional measured results" according to 8.4.2.
- 1> if the variable TRIGGERED\_6B\_EVENT is set to TRUE and if the UE Tx power (for TDD within a single TS) is greater or equal the value in IE "UE Transmitted Power Tx power threshold" stored for this event in the variable MEASUREMENT\_IDENTITY:
  - 2> set the variable TRIGGERED\_6B\_EVENT to FALSE.

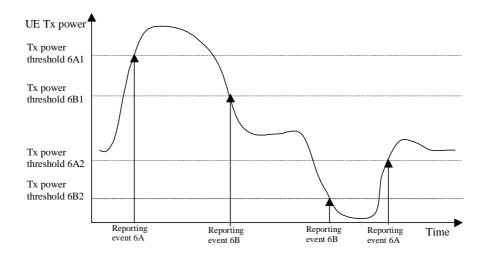


Figure 14.6.2.2-1: Event-triggered measurement reports when the UE Tx power becomes larger or less than absolute thresholds

#### 14.6.2.3 Reporting event 6C: The UE Tx power reaches its minimum value

When a UE internal measurement configuring event 6c is set up, the UE shall:

- 1> create a variable TRIGGERED\_6C\_EVENT related to that measurement, which shall initially be set to FALSE;
- 1> delete this variable when the measurement is released.

- 1> if the UE Tx power is equal its minimum value (for TDD its minimum value on a single TS) for a time period indicated by the IE "time\_to\_trigger":
  - 2> if the variable TRIGGERED\_6C\_EVENT is set to FALSE:
    - 3> set the variable TRIGGERED\_6C\_EVENT to TRUE;
    - 3> send a measurement report with IEs set as below:
      - 4> set in "UE internal measurement event results": "UE internal event identity" to "6c";
      - 4> set the IE "measured results" and the IE "additional measured results" according to 8.4.2.
- 1> if the variable TRIGGERED\_6C\_EVENT is set to TRUE and if the UE Tx power is greater than its minimum value:
  - 2> set the variable TRIGGERED\_6C\_EVENT to FALSE.

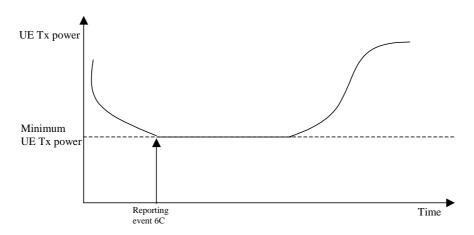


Figure 14.6.2.3-1: Event-triggered measurement report when the UE Tx power reaches its minimum value

#### 14.6.2.4 Reporting event 6D: The UE Tx power reaches its maximum value

When a UE internal measurement configuring event 6d is set up, the UE shall:

- 1> create a variable TRIGGERED\_6D\_EVENT related to that measurement, which shall initially be set to FALSE;
- 1> delete this variable when the measurement is released.

When this event is ordered by UTRAN in a measurement control message, the UE shall:

- 1> if the UE Tx power equals the maximum power the UE can transmit, i.e. the maximum UE TX power reduced by the power reduction used by the UE (for TDD its maximum value on a single TS) for a time period indicated by the IE "time\_to\_trigger":
  - 2> if the variable TRIGGERED 6D EVENT is set to FALSE:
    - 3> set the variable TRIGGERED\_6D\_EVENT to TRUE;
    - 3> send a measurement report with IEs set as below:
      - 4> set in "UE internal measurement event results": "UE internal event identity" to "6d";
      - 4> set the IE "measured results" and the IE "additional measured results" according to 8.4.2.
- 1> if the variable TRIGGERED\_6D\_EVENT is set to TRUE and if the UE Tx power is less than the maximum UE TX power:
  - 2> set the variable TRIGGERED\_6D\_EVENT to FALSE.

NOTE: The maximum UE TX power is defined in subclause 8.6.6.8 and the maximum allowed power reduction is defined in subclause 6.2.2 in [21].

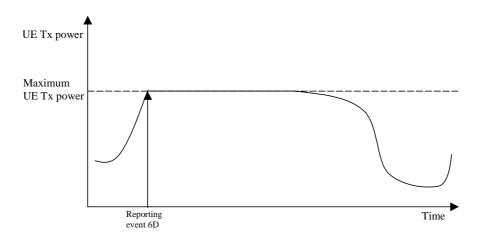


Figure 14.6.2.4-1: Event-triggered report when the UE Tx power reaches its maximum value

#### 14.6.2.5 Reporting event 6E: The UE RSSI reaches the UE's dynamic receiver range

When a UE internal measurement configuring event 6e is set up, the UE shall:

- 1> create a variable TRIGGERED\_6E\_EVENT related to that measurement, which shall initially be set to FALSE;
- 1> delete this variable when the measurement is released.

When this event is ordered by UTRAN in a measurement control message, the UE shall:

- 1> if the UE RSSI is greater or equal the UE's dynamic receiver range for a time period indicated by the IE "time\_to\_trigger":
  - 2> if the variable TRIGGERED\_6E\_EVENT is set to FALSE:
    - 3> set the variable TRIGGERED\_6E\_EVENT to TRUE;
    - 3> send a measurement report with IEs set as below:
      - 4> set in "UE internal measurement event results": "UE internal event identity" to "6e";
      - 4> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2.
- 1> if the variable TRIGGERED\_6E\_EVENT is set to TRUE and if the UE RSSI is less than the UE's dynamic receiver range:
  - 2> set the variable TRIGGERED\_6E\_EVENT to FALSE.

## 14.6.2.6 Reporting event 6F (FDD): The UE Rx-Tx time difference for a RL included in the active set becomes larger than an absolute threshold

When a UE internal measurement configuring event 6f is set up, the UE shall:

- 1> create a variable TRIGGERED\_6F\_EVENT related to that measurement, which shall initially be set to FALSE for each RL;
- 1> delete this variable when the measurement is released.

- 1> if the UE Rx-Tx time difference for a RL included in the active set is greater than the value in the IE "UE Rx-Tx time difference threshold" stored for this event in the variable MEASUREMENT\_IDENTITY for a time period indicated by the IE "time\_to\_trigger":
  - 2> if the variable TRIGGERED\_6F\_EVENT is set to FALSE for this RL:

- 3> set the variable TRIGGERED\_6F\_EVENT to TRUE for this RL;
- 3> send a measurement report with IEs set as below:
  - 4> set in "UE internal measurement event results": "UE internal event identity" to "6f";
  - 4> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2.
- 1> if the variable TRIGGERED\_6F\_EVENT is set to TRUE for a RL and if the UE RX-Tx time difference for this RL included in the active set is less than or equal to the value in the IE "UE Rx-Tx time difference threshold" stored for this event in the variable MEASUREMENT\_IDENTITY:
  - 2> set the variable TRIGGERED\_6F\_EVENT to FALSE for this RL.

## 14.6.2.6a Reporting event 6F (1.28 Mcps TDD): The time difference indicated by T<sub>ADV</sub> becomes larger than an absolute threshold

When a UE internal measurement configuring event 6f is set up, the UE shall:

- 1> create a variable TRIGGERED\_6F\_EVENT related to that measurement, which shall initially be set to the currently measured T<sub>ADV</sub>;
- 1> delete this variable when the measurement is released.

When this event is ordered by UTRAN in a measurement control message, the UE shall:

- 1> if the absolute value of the difference between the measured T<sub>ADV</sub> and the T<sub>ADV</sub> stored in the variable TRIGGERED\_6F\_EVENT is greater than the predefined threshold configured with the IE "T<sub>ADV</sub> Threshold" for this event in the variable MEASUREMENT\_IDENTITY for a time period indicated by the IE "time\_to\_trigger":
  - 2> set the variable TRIGGERED\_6F\_EVENT to the currently measured T<sub>ADV</sub>;
  - 2> send a measurement report with IEs set as below:
    - 3> set the IE " $T_{ADV}$ " to the measured value, and the IE "SFN" to the SFN during which the latest measurement was performed, in the IE " $T_{ADV}$  Info";
    - 3> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2.

## 14.6.2.7 Reporting event 6G: The UE Rx-Tx time difference for a RL included in the active set becomes less than an absolute threshold

When a UE internal measurement configuring event 6g is set up, the UE shall:

- 1> create a variable TRIGGERED\_6G\_EVENT related to that measurement, which shall initially be set to FALSE for each RL:
- 1> delete this variable when the measurement is released.

- 1> if the UE Rx-Tx time difference for a RL included in the active set is less than the value in IE "UE Rx-Tx time difference threshold" stored for this event in the variable MEASUREMENT\_IDENTITY for a time period indicated by the IE "time\_to\_trigger":
  - 2> if the variable TRIGGERED\_6G\_EVENT is set to FALSE for this RL:
    - 3> set the variable TRIGGERED\_6G\_EVENT to TRUE for this RL;
    - 3> send a measurement report with IEs set as below:
      - 4> set in "UE internal measurement event results": "UE internal event identity" to "6g";
      - 4> set the IE "measured results" and the IE "additional measured results" according to subclause 8.4.2.

1> if the variable TRIGGERED\_6G\_EVENT is set to TRUE for a RL and if the UE RX-Tx time difference for this RL included in the active set is greater or equal the value in IE "UE Rx-Tx time difference threshold" stored for this event in the variable MEASUREMENT\_IDENTITY:

2> set the variable TRIGGERED\_6G\_EVENT to FALSE for this RL.

### 14.7 UE positioning measurements

### 14.7.1 UE positioning measurement quantities

The quantity to measure for UE positioning is dependent on the positioning method and the method type requested in the IE "UE positioning reporting quantity".

- 1 SFN-SFN observed time difference type 2, optional.
- 2 Rx-Tx time difference type 2, optional.
- 3 GPS timing of cell fames, optional.

The definition of other GPS measurements is not within the scope of this specification.

#### 14.7.2 Void

### 14.7.3 UE positioning reporting events

In the IE "UE positioning reporting criteria" in the Measurement Control messages, the UTRAN notifies the UE of which events should trigger a measurement report. UE positioning reporting events that can trigger a report are given below. The content of the measurement report is dependant on the positioning method and method type requested in the IE "UE positioning reporting quantity" of the Measurement Control message and is described in detail in [18].

When one measurement identity corresponds to multiple positioning events with identical event identities, the UE behaviour is not defined.

## 14.7.3.1 Reporting Event 7a: The UE position changes more than an absolute threshold

This event is used for UE-based methods only.

- 1> if the UE changes its position compared to the last reported position by more than the threshold defined by the IE "Threshold position change"; or
- 1> if no position has been reported since the event was configured and the UE changes its position compared to the first position estimate obtained after the event was configured by more than the threshold defined by the IE "Threshold position change":
  - 2> send a measurement report as specified in subclause 8.6.7.19.1b;
  - 2> if the value of IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event is greater than zero:
    - 3> decrease IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event by one.
  - 2> if the value of IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event is equal to zero:
    - 3> delete this event from the list of events in variable MEASUREMENT\_IDENTITY.
- 1> if the UE is unable to evaluate the event because a position measurement is not available:
  - 2> not send a report.

## 14.7.3.2 Reporting Event 7b: SFN-SFN measurement changes more than an absolute threshold

When this event is ordered by UTRAN in a measurement control message, the UE shall:

- 1> send a measurement report when the SFN-SFN time difference measurement type 2 of any measured cell changes more than the threshold defined by the IE "Threshold SFN-SFN change"; and
- 1> if UTRAN set IE "Method Type" in "UE positioning reporting quantity" in the MEASUREMENT CONTROL message to "UE-based":
  - 2> act as specified in subclause 8.6.7.19.1b.
- 1> if UTRAN set IE "Method Type" in "UE positioning reporting quantity" in the MEASUREMENT CONTROL message to "UE-assisted":
  - 2> act as specified in subclause 8.6.7.19.1a.
- 1> if UTRAN set IE "Method Type" in "UE positioning reporting quantity" in the MEASUREMENT CONTROL message to "UE-assisted preferred but UE-based allowed" or "UE-based preferred but UE-assisted allowed":
  - 2> the UE may choose to act according to either subclause 8.6.7.19.1a or 8.6.7.19.1b.
- 1> if the value of IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event is greater than zero:
  - 2> decrease IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event by one.
- 1> if the value of IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event is equal to zero:
  - 2> delete this event from the list of events in variable MEASUREMENT IDENTITY.

## 14.7.3.3 Reporting Event 7c: GPS time and SFN time have drifted apart more than an absolute threshold

- 1> send a measurement report when the GPS Time Of Week and the SFN timer have drifted apart more than the threshold defined by the IE "Threshold SFN-GPS TOW"; and
- 1> if UTRAN set IE "Method Type" in "UE positioning reporting quantity" in the MEASUREMENT CONTROL message to "UE based":
  - 2> act as specified in subclause 8.6.7.19.1b.
- 1> if UTRAN set IE "Method Type" in "UE positioning reporting quantity" in the MEASUREMENT CONTROL message to "UE assisted":
  - 2> act as specified in subclause 8.6.7.19.1a.
- 1> if UTRAN set IE "Method Type" in "UE positioning reporting quantity" in the MEASUREMENT CONTROL message to "UE assisted preferred but UE based allowed" or "UE based preferred but UE assisted allowed":
  - 2> act as specified in subclause 8.6.7.19.1a or in subclause 8.6.7.19.1b depending on the method type chosen by the UE.
- 1> if the value of IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event is greater than zero:
  - 2> decrease IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event by one.
- 1> if the value of IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event is equal to zero:
  - 2> delete this event from the list of events in variable MEASUREMENT\_IDENTITY.

## 14.7.3.4 Reporting Event 7d: GANSS time and SFN time have drifted apart more than an absolute threshold

When this event is ordered by UTRAN in a measurement control message, the UE shall:

- 1> send a measurement report when the GANSS Time Of Week and the SFN timer have drifted apart more than the threshold defined by the IE "Threshold SFN-GANSS TOW"; and
- 1> if UTRAN set IE "Method Type" in "UE positioning reporting quantity" in the MEASUREMENT CONTROL message to "UE based":
  - 2> act as specified in subclause 8.6.7.19.1b.
- 1> if UTRAN set IE "Method Type" in "UE positioning reporting quantity" in the MEASUREMENT CONTROL message to "UE assisted":
  - 2> act as specified in subclause 8.6.7.19.1a.
- 1> if UTRAN set IE "Method Type" in "UE positioning reporting quantity" in the MEASUREMENT CONTROL message to "UE assisted preferred but UE based allowed" or "UE based preferred but UE assisted allowed":
  - 2> act as specified in subclause 8.6.7.19.1a or in subclause 8.6.7.19.1b depending on the method type chosen by the UE.
- 1> if the value of IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event is greater than zero:
  - 2> decrease IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event by one.
- 1> if the value of IE "Amount of Reporting" in variable MEASUREMENT\_IDENTITY for this event is equal to zero:
  - 2> delete this event from the list of events in variable MEASUREMENT\_IDENTITY.

#### 14.8 Void

## 14.9 Downlink power control

#### 14.9.1 Generalities

This function is implemented in the UE in order to set the SIR target value on each CCTrCH used for the downlink power control. This SIR value shall be adjusted according to an autonomous function in the UE in order to achieve the same measured quality as the quality target set by UTRAN. The quality target is set as the transport channel BLER value for each transport channel as signalled by UTRAN.

When transport channel BLER is used the UE shall run a quality target control loop such that the quality requirement is met for each transport channel, which has been assigned a BLER target.

The UE shall set the SIR target when the physical channel has been set up or reconfigured. It shall not increase the SIR target value before the power control has converged on the current value. The UE may estimate whether the power control has converged on the current value, by comparing the averaged measured SIR to the SIR target value.

NOTE: The power control function for F-DPCH is specified in [29].

## 14.9.2 Downlink power control in compressed mode

In compressed mode, the target SIR needs to be changed in several frames compared to normal mode. For this purpose, four values DeltaSIR1, DeltaSIRafter1, DeltaSIR2 and DeltaSIRafter2 are signalled by the UTRAN to the UE (see subclause 10.3.6.33).

For each frame, the target SIR offset during compressed mode, compared to normal mode is:

$$\Delta SIR = max (\Delta SIR1 \text{ compression}, ..., \Delta SIRn \text{ compression}) + \Delta SIR1 \text{ coding} + \Delta SIR2 \text{ coding}$$

where n is the number of TTI lengths for all TrChs of the CCTrCh,  $F_i$  is the length in number of frames of the i-th TTI and where  $\Delta SIR\_coding$  fulfils:

- ΔSIR1\_coding= DeltaSIR1 if the start of the first transmission gap in the transmission gap pattern is within the current frame.
- ΔSIR1\_coding= DeltaSIRafter1 if the current frame just follows a frame containing the start of the first transmission gap in the transmission gap pattern.
- ΔSIR2\_coding= DeltaSIR2 if the start of the second transmission gap in the transmission gap pattern is within the current frame.
- ΔSIR2\_coding= DeltaSIRafter2 if the current frame just follows a frame containing the start of the second transmission gap in the transmission gap pattern.
- $\Delta$ SIR1\_coding= 0 and  $\Delta$ SIR2\_coding= 0 otherwise.

and  $\Delta$ SIRi\_compression is defined by :

- ΔSIRi\_compression = 3 dB for downlink frames compressed by reducing the spreading factor by 2.
- ΔSIRi\_compression = 0 dB in all other cases.

Several compressed mode patterns applying to the same frames should be avoided as much as possible.

In case several compressed mode patterns are used simultaneously, a  $\Delta$ SIR offset is computed for each compressed mode pattern and the sum of all  $\Delta$ SIR offsets is applied to the frame.

### 14.10 Calculated Transport Format Combination

The Calculated Transport Format Combination (CTFC) is a tool for efficient signalling of transport format combinations.

Let I be the number of transport channels that are included in the transport format combination. For DCHs, all configured DCHs are included in the transport format combination. Each transport channel TrCH<sub>i</sub>, i = 1, 2, ..., I, has L<sub>i</sub> transport formats, i.e. the transport format indicator TFI<sub>i</sub> can take L<sub>i</sub> values,  $TFI_i \in \{0,1,2,...,L_i-1\}$ .

Define 
$$P_i = \prod_{j=0}^{i-1} L_j$$
 , where  $i = 1, 2, ..., I$ , and  $L_0 = 1$ .

Let  $TFC(TFI_1, TFI_2, ..., TFI_l)$  be the transport format combination for which  $TrCH_1$  has transport format  $TFI_1$ ,  $TrCH_2$  has transport format  $TFI_2$ , etc. The corresponding  $CTFC(TFI_1, TFI_2, ..., TFI_l)$  is then computed as:

$$CTFC(TFI_1, TFI_2, ..., TFI_I) = \sum_{i=1}^{I} TFI_i \cdot P_i.$$

For FACH and PCH transport channels, " $TrCH_1$ " corresponds to the transport channel listed at the first position in IE "FACH/PCH information" in IE "Secondary CCPCH System Information", " $TrCH_2$ " corresponds to the transport channel listed at the second position in IE "FACH/PCH information" and so on.

For all other transport channels in FDD and for all configured transport channels of the same transport channel type (i.e. DCH, DSCH, USCH) in TDD, "TrCH<sub>1</sub>" corresponds to the transport channel having the lowest transport channel identity in the transport format combination mapped to the TFCI field. "TrCH<sub>2</sub>" corresponds to the transport channel having the next lowest transport channel identity, and so on.

#### 14.10.1 Default TFCS for MBMS

#### 14.10.1.1 S-CCPCH configuration including a FACH carrying MSCH

In case the S-CCPCH configuration includes a FACH carrying MSCH, the default TFCS is defined according to the following:

Let TrCH 1 be the FACH carrying MSCH, TrCH 2 be the first TrCH carrying MTCH listed in the IE "TrCh information list", TrCH 3 be the second TrCH carrying MTCH listed in the IE "TrCh information list" etc. and let TrCH I be the last TrCH carrying MTCH listed in the IE "TrCh information list".

Each transport channel  $TrCH_i$ , i = 1, 2, ..., I, has  $L_i$  transport formats, i.e. the transport format indicator  $TFI_i$  can take  $L_i$  values.

Each transport format combination set is defined by the transport formats of each transport channel mapped on this S-CCPCH:

```
TFC = (TFI_1, TFI_2, ..., TFI_I).
```

The "MBMS implicit TFCS" contains then the following set of TFCs:

$$\begin{split} TFCS = \{ (0,0,\ldots,0), & (0,1,\ldots,0),\ldots, (0,L_2,\ldots,0), (0,0,1,\ldots,0),\ldots, (0,0,L_3,\ldots,0),\ldots, (0,0,0,\ldots,1),\ldots, (0,0,0,\ldots,L_I), \\ & (1,0,\ldots,0), (1,1,\ldots,0),\ldots, (1,L_2,\ldots,0), (1,0,1,\ldots,0),\ldots, (1,0,L_3,\ldots,0),\ldots, (1,0,0,\ldots,1),\ldots, (1,0,0,\ldots,L_I), \\ & (2,0,\ldots,0),\ldots, (L_1,0,\ldots,0) \} \end{split}$$

#### 14.10.1.2 S-CCPCH configuration not including a FACH carrying MSCH

In case the S-CCPCH configuration does not include a FACH carrying MSCH, the default TFCS is defined according to the following:

Let TrCH 1 be the first TrCH listed in the IE "TrCh information list", TrCH 2 be the second TrCH listed in the IE "TrCh information list" etc. and let TrCH I be the last TrCH listed in the IE "TrCh information list".

Each transport channel  $TrCH_i$ , i = 1, 2, ..., I, has  $L_i$  transport formats, i.e. the transport format indicator  $TFI_i$  can take  $L_i$  values.

Each transport format combination set is defined by the transport formats of each transport channel mapped on this S-CCPCH:

```
TFC = (TFI_1, TFI_2, ..., TFI_I).
```

The "MBMS implicit TFCS" contains then the following set of TFCs:

$$TFCS = \{(0,...,0), (1,...,0),..., (L_1,...,0), (0,1,...,0),..., (0,L_2,...,0),..., (0,0,...,1),..., (0,0,...,L_I)\}$$

# 14.11 UE autonomous update of virtual active set on non-used frequency (FDD only)

In the text that follows:

- a "non-used frequency" is a frequency that the UE has been ordered to measure upon but is not used for the connection. A "used frequency" is a frequency that the UE has been ordered to measure upon and is also currently used for the connection;
- a "non-used frequency (resp. cell) considered in an inter-frequency measurement" shall be understood as a non-used frequency (resp. cell) included in the list of cells pointed at in the IE "cells for measurement" if it was received for that measurement, or otherwise as a non-used frequency (resp. cell) included in the "Inter-frequency cell info" part of the variable CELL\_INFO\_LIST.

For event-triggered inter frequency measurements it is possible to use intra-frequency measurement reporting events for support of maintenance of an active set associated with a non-used frequency considered in that measurement, a "virtual

active set" and used in the evaluation of the frequency quality estimates. The "initial virtual active set" for a frequency is the virtual active set that is associated to that frequency just after a message was received that sets up or modifies the inter-frequency measurement.

The way the virtual active sets are initiated and updated for the non-used frequencies considered in an inter-frequency measurement is described in the two subclauses below.

The UE shall support a single virtual active set per non-used frequency.

The virtual active set is not initialised and maintained for an inter frequency measurement with periodic reporting. A virtual active set initialised and maintained by another inter-frequency measurement does not affect reporting of the periodic inter-frequency measurement.

#### 14.11.1 Initial virtual active set

If the UE receives a MEASUREMENT CONTROL message that sets up or modifies an inter-frequency measurement and includes the IE "Inter-frequency set update"; or

If at least one cell can be measured on a non-used frequency for which the current virtual active set is empty (see subclause 14.11.2), the UE shall:

- 1> for each non-used frequency  $F_i$  considered in the measurement where cells can be measured:
  - 2> if event 1a is configured for the used frequency in an intra-frequency measurement:
    - 3> include in the initial virtual active set the  $N_i$  cells that have either the greatest downlink  $E_c/N_0$  or the greatest downlink RSCP after despreading or the lowest pathloss (the measurement quantity to be used is determined by the IE "intra-frequency measurement quantity" of the intra-frequency measurement from which the event 1a configuration is taken), among the cells on frequency  $F_i$  considered in that interfrequency measurement, where:

$$N_i = \min(N_{la}, N_{Cells Fi})$$
 if  $N_{la} \neq 0$  and  $N_i = N_{Cells Fi}$  otherwise.

where:

 $N_{Ia}$  is the "Reporting deactivation threshold" included in the intra-frequency measurement for the first event 1a defined in the intra-frequency measurement with the lowest identity at the time the interfrequency measurement was received with the IE "Inter-frequency set update" present.

 $N_{Cells}$   $F_i$  is the number of cells on frequency  $F_i$  considered in that inter-frequency measurement.

2> else:

$$N_i = N_{Cells Fi}$$

where:

 $N_{Cells \ Fi}$  is the number of cells on frequency  $F_i$  considered in that inter-frequency measurement.

- NOTE1: The UE initialises the virtual active set with up to the maximum number of inter-frequency cells supported by the UE as defined in [19].
- NOTE2: If the UTRAN configures more than one measurement using events 2A, 2B, 2C or 2E the UE measurement capabilities may be exceeded due to the necessary copying of 1A, 1B, 1C criteria. To avoid this the UTRAN may configure one measurement to apply to multiple frequencies so that the 1A, 1B, and 1C criteria will only be copied once.
- NOTE3: After a hard handover (see subclause 8.3.5), if the MEASUREMENT CONTROL message that restarts an inter-frequency measurement using the virtual active set does not include the IE "Inter-frequency set update", the UE behaviour regarding the virtual active set is not specified.

#### 14.11.2 Virtual active set update during an inter-frequency measurement

For an inter-frequency measurement, the UE shall:

- 1> apply the events of type 1a, 1b and 1c that were defined for the used frequency in other stored measurements of type "intra-frequency" at the time the inter-frequency measurement was last received with the IE "Inter-frequency set update" present; and
- 1> update the virtual active set for the non-used frequencies considered in that measurement according to the following rules:
  - 2> if several events of type 1a (resp. 1b,1c) were defined for the used frequency when the inter-frequency measurement was last received with the IE "Inter-frequency set update" present, only the first 1a event (resp 1b, 1c) that was defined in the measurement with the lowest measurement identity shall apply to the non-used frequencies;
  - 2> all the cells considered in the inter-frequency measurements shall be able to affect the reporting range for event 1a and 1b. (i.e. the IE "Cells forbidden to affect reporting range" possibly stored for the intra-frequency measurements on the used frequency does not apply to the non-used frequencies considered in the interfrequency measurement);
  - 2> the IEs "amount of reporting" and "reporting interval" that were stored for the intra-frequency measurements on the used frequency shall not be considered if reports of the virtual active set updates are needed.
  - 2> the measurement quantity and filter coefficient to be used is determined by the IE "intra-frequency measurement quantity" of the intra-frequency measurement from which the intra-frequency event configuration configuration is taken.
- NOTE: If the measurement quantity and filter coefficients to be used differ for the 1a, 1b, and 1c events applied then the UE behaviour is unspecified.
- 1> if event 1a is applicable to the non-used frequencies considered in the inter-frequency measurement, always only consider monitored cells that are not in the virtual active set for this event, and:
  - 2> when this event is triggered (according to the criteria described in subclause 14.1.2.1) by a cell for a non-used frequency considered in that measurement:
    - 3> if the "Reporting deactivation threshold" is equal to 0, or if the "Reporting deactivation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is less than or equal to the "Reporting deactivation threshold":
      - 4> add the primary CPICH that enters the reporting range to the "virtual active set".
  - 2> if event 1b is applicable for the non-used frequencies considered in that inter-frequency measurement, always only consider cells in the virtual active set for this event, and when this event is triggered (according to the criteria described in subclause 14.1.2.2) by a cell for a non-used frequency considered in that measurement:
    - 3> if the number of cells included in the virtual active set is greater than 1:
      - 4> remove the primary CPICH that leaves the reporting range from the "virtual active set".
  - 2> if event 1c is applicable for the non-used frequencies considered in that inter-frequency measurement, always only consider monitored cells for this event, and when this event is triggered (according to the criteria described in subclause 14.1.2.3) by a cell for a non-used frequency considered in that measurement:
    - 3> if the "Reporting activation threshold" is equal to 0, or if the "Reporting activation threshold" is different from 0 and the number of cells included in the virtual active set for that frequency is greater than or equal to the "Reporting activation threshold":
      - 4> rank all active and non-active primary CPICHs and take the *n* best cells to create a new "virtual active set", where *n* is the number of active primary CPICHs in the "virtual active set".
- 1> if Event 1a is not defined for the used frequency in other stored measurements of type "intra-frequency" at the time the inter-frequency measurement was set up:

2> the UE shall continuously update the virtual active set to consist of all cells on frequency  $F_i$  considered in that inter-frequency measurement.

NOTE: The UE needs to only update the virtual active set with up to the maximum number of interfrequency cells supported by the UE as defined in [19].

If none of the cells that are considered in the measurement on this frequency were measured, the UE may treat the virtual active set as empty and follow the appropriate initialisation procedured in subclause 14.11.1 when any relevant cell can first be measured.

If a cell is a member of the virtual active set and is removed from the variable CELL\_INFO\_LIST or removed from the list of cells pointed at by the IE "Cells for measurement" for the inter-frequency measurement then the UE shall remove the cell from the virtual active set.

If an inter-frequency measurement that initialised a virtual active set is released, then any virtual active set associated with this measurement shall also be released.

# 14.12 Provision and reception of RRC information between network nodes

#### 14.12.0 General

In certain cases, e.g., when performing handover to UTRAN or when performing SRNC relocation, RRC information may need to be transferred between UTRAN nodes, between UTRAN and another RAT, between nodes within another RAT or between the UE and another RAT.

The RRC information exchanged between network nodes or between the UE and another RAT is typically transferred by means of RRC information containers. An RRC information container is a self-contained and extensible RRC information unit that may be used to transfer a number of different RRC messages, one at a time. As stated before, RRC information containers may be used to transfer RRC messages across interfaces other than the Uu interface. The RRC messages that may be included in RRC information containers have similar characteristics as the RRC messages that are transferred across the Uu interface.

The RRC messages that are sent to/ from the UE, e.g., HANDOVER TO UTRAN COMMAND, INTER RAT HANDOVER INFO are covered by (sub)clauses 8, 9, 10, 11.0-11.4 and 12 of this specification. The following subclauses concern RRC messages exchanged between network nodes.

In future versions of this specification, it is possible to extend the RRC messages transferred across interfaces other than Uu. For these RRC messages the same extension mechanism applies as defined for RRC messages transferred across the Uu interface, as is specified in subclause 10.1, i.e., both critical and non-critical extensions may be added.

The transfer syntax for RRC information containers and RRC messages transferred between network nodes is derived from their ASN.1 definitions by use of Packed Encoding Rules, unaligned (X.691). It should be noted that the encoder adds final padding to achieve octet alignment. The resulting octet string is, carried in a container, transferred between the network nodes.

When using a separate RRC information container for each endpoint, the receiving RRC protocol entity is able to interpret the received container; this means that the receiver need not take into account information about the (network interface) message used in transferring the container.

The following encoding rules apply in addition to what has been specified in X.691 [49]:

1> When a bit string value is placed in a bit-field as specified in 15.6 to 15.11 in [11], the leading bit of the bit string value shall be placed in the leading bit of the bit-field, and the trailing bit of the bit string value shall be placed in the trailing bit of the bit-field.

NOTE: The terms "leading bit" and "trailing bit" are defined in ITU-T Rec. X.680 | ISO/IEC 8824-1. When using the "bstring" notation, the leading bit of the bit string value is on the left, and the trailing bit of the bit string value is on the right.

## 14.12.0a General error handling for RRC messages exchanged between network nodes

The error handling for RRC messages that are exchanged between network nodes applies the same principles as defined for other RRC messages.

Although the same principles apply for network nodes receiving unknown, unforeseen and erroneous RRC messages received in RRC information containers, the notification of the error should be done in a different manner, as specified in the following:

The network node receiving an invalid RRC message from another network node should:

- 1> if the received RRC message was unknown, unforeseen or erroneous:
  - 2> prepare an RRC FAILURE INFO message, including the IE "Failure cause" set to "Protocol error" and the IE "Protocol error information" including an IE "Protocol error cause" which should be set as follows:
    - 3> to "ASN.1 violation or encoding error" upon receiving an RRC message for which the encoded message does not result in any valid abstract syntax value;
    - 3> to "Message type non-existent or not implemented" upon receiving an unknown RRC message type;
    - 3> to "Message extension not comprehended" upon receiving an RRC message including an undefined critical message extension;
    - 3> to "Information element value not comprehended" upon receiving an RRC message including an mandatory IE for which no default value is defined and for which either the value is set to spare or for which the encoded IE does not result in a valid transfer syntax. The same applies for conditional IEs, for which the conditions for presence are met, the IE is present but has a value set to spare or for which the encoded IE does not result in a valid transfer syntax;
    - 3> to "Information element missing" upon receiving an RRC information container with an absent conditional IE for which the conditions for presence are met.
- 1> if there was another failure to perform the operation requested by the received RRC message:
  - 2> prepare an RRC FAILURE INFO message, including the IE "Failure cause" set to a value that reflects the failure cause.
- 1> send the RRC FAILURE INFO message to the network node from which the invalid RRC protocol information was received.
- NOTE 1: The appropriate (failure) messages used across the network interfaces may not support the inclusion of a RRC information container. In this case, the information contained in the RRC FAILURE INFO message may need to be transferred otherwise e.g. by mapping to a cause value (e.g. a cause value in the RR-HANDOVER FAILURE message when there is a error associated with the RRC-HANDOVER TO UTRAN COMMAND message).
- NOTE 2 In case the RRC procedure used to perform SRNS relocation fails e.g. due to non comprehension, the source RNC may notify the target RNC by including the diagnostics information (IEs "Protocol error" and "Protocol error information") in the "RRC message "SRNS Relocation" Info sent in the RRC information container" used for a subsequent relocation request.

## 14.12.1 RRC Information to target RNC

The RRC information container "RRC Information to target RNC" may either be sent from source RNC or from another RAT. In case of handover to UTRAN, this information originates from another RAT, while in case of SRNC relocation the RRC information originates from the source RNC. In case of handover to UTRAN, the RRC information transferred may provide UTRAN specific information, as defined in the INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES message, that the target RNC needs when preparing the handover command message. In case of SRNC relocation and handover/cell reselection from GERAN *Iu mode*, the RRC information transferred specifies the configuration of RRC and the lower layers it controls, e.g., including the radio bearer and transport channel configuration. It is used by the target RNC to initialise RRC and the lower layer protocols to facilitate SRNC relocation and handover/cell reselection from GERAN *Iu mode* in a manner transparent to the UE.

RFC 3095 CONTEXT INFO is used to transfer the compressor and decompressor context information of the RFC 3095 protocol from source RNC to target RNC.

| Information Element/Group Name | Need | Multi | Type and reference   | Semantics description                                     | Version |
|--------------------------------|------|-------|--|---|---------|
| CHOICE case                    | MP   |       |  | At least one spare choice, Criticality: Reject, is needed |         |
| >Handover to UTRAN             |      |       | INTER RAT<br>HANDOVER<br>INFO WITH<br>INTER RAT<br>CAPABILITI<br>ES<br>14.12.4.1 |   |         |
| >SRNC relocation               |      |       | SRNS<br>RELOCATIO<br>N INFO<br>14.12.4.2   |   |         |
| >RFC 3095 context info         |      |       | RFC 3095<br>CONTEXT<br>INFO<br>14.12.4.4   |   | REL-5   |

### 14.12.2 RRC information, target RNC to source RNC

There are 2 possible cases for RNC relocation:

- 1. The UE is already under control of target RNC; and
- 2. The SRNC Relocation with Hard Handover (UE still under control of SRNC), but UE is moving to a location controlled by the target RNC (based on measurement information).

In case 1 the relocation is transparent to the UE and there is no "reverse" direction container. The SRNC just assigns the 'serving' function to the target RNC, which then becomes the Serving RNC.

In case 2 the relocation is initiated by SRNC, which also provides the RRC Initialisation Information to the target RNC. Base on this information, the target RNC prepares the Hard Handover Message ("Physical channel reconfiguration" (subclause 8.2.6), "radio bearer establishment" (subclause 8.2.1), "Radio bearer reconfiguration" (subclause 8.2.2), "Radio bearer release" (subclause 8.2.3) or "Transport channel reconfiguration" (subclause 8.2.4).

In case 2 two possibilities are defined in order to transmit the relocation message from the target RNC to the source RNC which can be chosen by the source RNC by including or not including the IE "RB Id for handover message" in the IE "SRNS Relocation Info".

In case the IE "RB Id for handover message" has been received by the target RNC in the IE "SRNS Relocation Info", the target RNC should choose the IE "DL DCCH message" and include the DL DCCH message that should be transmitted transparently to the UE by the source RNC. In that case, the target RNC is integrity protecting the message if applicable.

If the target RNC did not receive the IE "RB Id for handover message" in the IE "SRNS Relocation Info" the target RNC should use another choice. In that case, the source RNC should integrity protect the message before transmitting it to the UE if applicable.

The source RNC then transmits the Handover Message to the UE, which then performs the handover.

In the successful case, the UE transmits an XXX COMPLETE message, using the new configuration, to the target RNC.

In case of failure, the UE transmits an XXX FAILURE, using the old configuration, to the source RNC and the RRC context remains unchanged (has to be confirmed and checked with the SRNS relocation procedure).

| Information Element/Group name | Need | Multi | Type and reference | Semantics description  |
|--------------------------------|------|-------|--------------------|--|
| CHOICE RRC message             | MP   |       |                    | At least one spare choice,<br>Criticality: Reject, is needed |

| Information Element/Group name        | Need | Multi | Type and reference                                      | Semantics description |
|---------------------------------------|------|-------|---|-----------------------|
| >RADIO BEARER SETUP                   |      |       | RADIO<br>BEARER<br>SETUP<br>10.2.31                     |                       |
| >RADIO BEARER<br>RECONFIGURATION      |      |       | RADIO<br>BEARER<br>RECONFIG<br>URATION<br>10.2.25       |                       |
| >RADIO BEARER RELEASE                 |      |       | RADIO<br>BEARER<br>RELEASE<br>10.2.28                   |                       |
| >TRANSPORT CHANNEL<br>RECONFIGURATION |      |       | TRANSPOR<br>T CHANNEL<br>RECONFIG<br>URATION<br>10.2.51 |                       |
| >PHYSICAL CHANNEL<br>RECONFIGURATION  |      |       | PHYSICAL<br>CHANNEL<br>RECONFIG<br>URATION<br>10.2.20   |                       |
| >RRC FAILURE INFO                     |      |       | RRC<br>FAILURE<br>INFO<br>10.2.41<br>a                  |                       |
| >DL DCCH message                      |      |       | OCTET<br>STRING   |                       |

#### 14.12.3 Void

### 14.12.4 RRC messages exchanged between network nodes

#### 14.12.4.0 HANDOVER TO UTRAN COMMAND

This RRC message is sent between network nodes to transfer the actual handover command including the details of the radio configuration to be used upon handover to UTRAN as compiled by the target RNC.

Direction: target RNC →source RAT

The message is exactly the same as the HANDOVER TO UTRAN COMMAND defined in subclause 10.2.16a.

#### 14.12.4.0a INTER RAT HANDOVER INFO

This RRC message is sent between network nodes to transfer information relevant for the target RNC when preparing for handover to UTRAN.

Direction: source RNC/RAT→target RAT

The message is exactly the same as the INTER RAT HANDOVER INFO defined in subclause 10.2.16d

#### 14.12.4.1 INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES

This RRC message is sent between network nodes when preparing for an inter RAT handover to UTRAN.

Direction: source RAT→target RNC

| Information Element/Group<br>Name                      | Need       | Multi   | Type and reference   | Semantics description  |
|--|------------|---|--|--|
| UE Information elements                                |            |   |  |  |
| Predefined configuration status information            | OP         |   | Predefined configuration status information 10.3.4.5a              |  |
| Predefined configuration status information compressed | OP         |   | Predefined configuration status information compressed 10.3.4.5b   | REL-5  |
| UE security information                                | OP         |   | UE security information 10.3.3.42b                                 |  |
| UE security information2                               | OP         |   | UE security information2 10.3.3.42c                                | REL-6  |
| UE Specific Behaviour Information 1 interRAT           | OP         |   | UE Specific<br>Behaviour<br>Information 1<br>interRAT<br>10.3.3.52 | This IE shall not be included in this version of the protocol                                |
| UE capability container                                | OP         |   |  |  |
| >UE radio access capability                            | MP         |   | UE radio<br>access<br>capability<br>10.3.3.42                      |  |
| >UE radio access capability extension                  | MP         |   | UE radio<br>access<br>capability<br>extension<br>10.3.3.42a        | Although this IE is not always required, the need has been set to MP to align with the ASN.1 |
| UE radio access capability compressed                  | OP         |   | UE radio<br>access<br>capability<br>compressed<br>10.3.3.420       | REL-5  |
| UE radio access capability comp 2                      | OP         |   | UE radio<br>access<br>capability<br>comp 2<br>10.3.3.420a          | REL-6  |
| Other Information elements                             |            |   |  |  |
| UE system specific capability                          | OP         | 1 to<br><maxsyste<br>mCapabilit<br/>y&gt;</maxsyste<br> |  |  |
| >Inter-RAT UE radio access capability                  | MP         |   | Inter-RAT<br>UE radio<br>access<br>capability<br>10.3.8.7          |  |
| Failure cause  | OP         |   | Failure<br>cause<br>10.3.3.13                                      | Diagnostics information related to an earlier handover to UTRAN request                      |
| Protocol error information                             | CV-ProtErr |   | Protocol<br>error<br>information<br>10.3.8.12                      |  |

| Condition | Explanation  |  |  |
|-----------|--|--|--|
| ProtErr   | This IE is mandatory present if the IE "Protocol error |  |  |
|           | indicator" is included and has the value TRUE.         |  |  |
|           | Otherwise it is not needed.                            |  |  |

NOTE1: To facilitate that network nodes can transparently forward the RRC information received, the INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES should include the entire INTER RAT HANDOVER INFO message. The network node, which may not be able to decode the information received, may only append some information to what was received.

NOTE2: The above table does not need to reflect the order of the information elements in the actual encoded message. The order, that is reflected in the ASN.1, should be chosen in a manner that avoids that network nodes need to perform reordering of information elements.

#### 14.12.4.2 SRNS RELOCATION INFO

This RRC message is sent between network nodes when preparing for an SRNS relocation or a handover/cell reselection from GERAN *Iu mode*.

With the presence or absence of the IE "RB identity for Hard Handover message" the source RNC indicates to the target SRNC whether the source RNC expects to receive the choice "DL DCCH message" in the IE "RRC information, target RNC to source RNC" in case the SRNS relocation is of type "UE involved". Furthermore the target RNC uses this information for the calculation of the MAC-I.

Direction: source RNC/RAT→target RNC

| Information Element/Group<br>Name | Need | Multi | Type and reference  | Semantics description   | Version |
|-----------------------------------|------|-------|---|---|---------|
| Non RRC IEs                       |      |       |   |   |         |
| >RB identity for Handover message | OP   |       | RB identity<br>10.3.4.16  | Gives the id of the radio bearer on which the source RNC will transmit the RRC message in the case the relocation is of type "UE involved". In handover from GERAN <i>Iu mode</i> this IE is always set to 2. |         |
| >State of RRC                     | MP   |       | RRC state indicator, 10.3.3.35a   |   |         |
| >State of RRC procedure           | MP   |       | Enumerated (await no RRC message, await RB Release Complete, await RB Setup Complete, await RB Reconfigurat ion Complete, await Transport CH Reconfigurat ion Complete, await Transport CH Reconfigurat ion Complete, await CH Reconfigurat ion Complete, await Complete, |   |         |

| Information Element/Group<br>Name                                  | Need             | Multi                                      | Type and reference  | Semantics description  | Version |
|--|------------------|--|---|--|---------|
|  |                  |  | Set Update<br>Complete,<br>await<br>Handover<br>Complete, |  |         |
|  |                  |  | send Cell<br>Update<br>Confirm,<br>send URA<br>Update     |  |         |
|  |                  |  | Confirm,<br>, others)                                     |  |         |
| Ciphering related information >Ciphering status for each CN domain | MP               | <1 to<br>maxCNDo<br>mains>                 |   |  |         |
| >>CN domain identity   | MP               |  | CN domain identity 10.3.1.1                               |  |         |
| >>Ciphering status   | MP               |  | Enumerated(<br>Not started,<br>Started)                   |  |         |
| >>START  | MP               |  | START<br>10.3.3.38  | START value to be used in this CN domain.  |         |
| >Latest configured CN domain                                       | MP               |  | CN domain identity 10.3.1.1                               | Value contained in the variable of the same name. In case this variable is empty, the source RNC can set any CN domain identity. In that case, the Ciphering status and the Integrity protection status should be Not started and the target RNC should not initialise the variable Latest configured CN domain. |         |
| >Calculation time for ciphering related information                | CV-<br>Ciphering |  |   | Time when the ciphering information of the message were calculated, relative to a cell of the target RNC. In handover and cell reselection from GERAN <i>lu mode</i> this field is not present.  |         |
| >>Cell Identity  | MP               |  | Cell Identity<br>10.3.2.2                                 | Identity of one of the cells under the target RNC and included in the active set of the current call   |         |
| >>SFN  | MP               |  | Integer(040<br>95)  | ourion can   |         |
| >COUNT-C list  | OP               | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br> |   | COUNT-C values for radio<br>bearers using transparent<br>mode RLC  |         |
| >>CN domain identity   | MP               |  | CN domain identity 10.3.1.1                               |  |         |
| >>COUNT-C  | MP               |  | Bit string(32)  |  |         |
| >Ciphering info per radio bearer                                   | OP               | 1 to<br><maxrb></maxrb>                    |   | For signalling radio bearers this IE is mandatory.   |         |
| >>RB identity  | MP               |  | RB identity<br>10.3.4.16                                  |  |         |
| >>Downlink HFN   | MP               |  | Bit<br>string(2025  | This IE is either RLC AM HFN (20 bits) or RLC UM HFN (25 bits)   |         |
| >>Downlink SN  | CV-SRB1          | 1  | Bit String(7)   | VT(US) of RLC UM   |         |
| >>Uplink HFN   | MP               |  | Bit<br>string(2025  | This IE is either RLC AM HFN (20 bits) or RLC UM HFN (25   |         |

| Information Element/Group Name                                     | Need  | Multi                                     | Type and reference                      | Semantics description   | Version |
|--|-------|---|---|---|---------|
| 1100   |       |   | )                                       | bits)   |         |
| Integrity protection related information                           |       |   |   |   |         |
| >Integrity protection status                                       | MP    |   | Enumerated(<br>Not started,<br>Started) |   |         |
| >Signalling radio bearer specific integrity protection information | CV-IP | 4 to<br><maxsrbs<br>etup&gt;</maxsrbs<br> |   |   |         |
| >>Uplink RRC HFN   | MP    |   | Bit string<br>(28)                      | For each SRB, in the case activation times for the next IP configuration to be applied on this SRB have already been reached this IE corresponds to the last value used. Else this value corresponds to the value the source would have initalized the HFN to at the activation time, not considering any increment of HFN due to RRC SN roll over. Increment of HFN due to RRC SN roll over is taken care of by target based on value sent by the source.  |         |
| >>Downlink RRC HFN   | MP    |   | Bit string (28)                         | For each SRB, in the case activation times for the next IP configuration to be applied on this SRB have already been reached this IE corresponds to the last value used. Else this value corresponds to the value the source would have initalized the HFN to at the activation time, not considering any increment of HFN due to RRC SN roll over. Increment of HFN due to RRC SN roll over is taken care of by target based on value sent by the source. In particular, for SRB2, this IE should not take into account the RRC message that will trigger the relocation. NOTE: In order to have the possibility of sending downlink messages after the construction of the IE "SRNS RELOCATION INFO", the source may choose a value ahead of the last value used. |         |
| >>Uplink RRC Message sequence number                               | MP    |   | Integer (0<br>15)                       | For each SRB, this IE corresponds to the last value received or in the case activation time was not reached for a configuration the value equals (activation time - 1).   |         |
| >>Downlink RRC Message sequence number                             | MP    |   | Integer (0<br>15)                       | For each SRB, this IE corresponds to the last value used or in the case activation time was not reached for a configuration the value equals (activation time -1). In particular, for SRB2, this IE should not take into account  |         |

| Information Element/Group<br>Name                          | Need | Multi | Type and reference   | Semantics description  | Version |
|--|------|-------|--|--|---------|
|  |      |       |  | the RRC message that will trigger the relocation. NOTE: In order to have the possibility of sending downlink messages after the construction of the IE "SRNS RELOCATION INFO", the source may choose a value ahead of the last value used for SRB3 and SRB4. |         |
| >Implementation specific parameters                        | OP   |       | Bit string (1512)  |  |         |
| RRC IEs  |      |       |  |  |         |
| UE Information elements                                    |      |       |  |  |         |
| >U-RNTI  | MP   |       | U-RNTI<br>10.3.3.47  | G-RNTI is placed in this field when performing handover or cell reselection from GERAN <i>lu mode.</i>   |         |
| >C-RNTI  | OP   |       | C-RNTI<br>10.3.3.8   |  |         |
| >UE radio access Capability                                | MP   |       | UE radio<br>access<br>capability<br>10.3.3.42                                    |  |         |
| >UE radio access capability extension                      | OP   |       | UE radio<br>access<br>capability<br>extension<br>10.3.3.42a                      |  |         |
| >Last known UE position                                    | OP   |       | 10.0.0.124   |  |         |
| >>SFN  | MP   |       | Integer<br>(04095)   | Time when position was estimated   |         |
| >>Cell ID  | MP   |       | Cell identity;<br>10.3.2.2   | Indicates the cell, the SFN is valid for.  |         |
| >>CHOICE Position estimate                                 | MP   |       |  |  |         |
| >>>Ellipsoid Point   |      |       | Ellipsoid<br>Point;<br>10.3.8.4a   |  |         |
| >>>Ellipsoid point with uncertainty circle                 |      |       | Ellipsoid<br>point with<br>uncertainty<br>circle<br>10.3.8.4d                    |  |         |
| >>>Ellipsoid point with uncertainty ellipse                |      |       | Ellipsoid<br>point with<br>uncertainty<br>ellipse<br>10.3.8.4e                   |  |         |
| >>>Ellipsoid point with altitude                           |      |       | Ellipsoid<br>point with<br>altitude<br>10.3.8.4b                                 |  |         |
| >>>Ellipsoid point with altitude and uncertainty ellipsoid |      |       | Ellipsoid<br>point with<br>altitude and<br>uncertainty<br>ellipsoid<br>10.3.8.4c |  |         |

| Information Element/Group<br>Name                 | Need     | Multi   | Type and reference  | Semantics description  | Version |
|---|----------|---|---|--|---------|
| >UE Specific Behaviour<br>Information 1 idle      | OP       |   | UE Specific<br>Behaviour<br>Information<br>idle 1<br>10.3.3.51        | This IE should be included if received via the "INTER RAT HANDOVER INFO", the "RRC CONNECTION REQUEST", the IE "SRNS RELOCATION INFO" or the "Inter RAT Handover Info with Inter RAT Capabilities" |         |
| >UE Specific Behaviour<br>Information 1 interRAT  | OP       |   | UE Specific<br>Behaviour<br>Information 1<br>interRAT<br>10.3.3.52    | This IE should be included if received via the "INTER RAT HANDOVER INFO", the "RRC CONNECTION REQUEST", the IE "SRNS RELOCATION INFO" or the "Inter RAT Handover Info with Inter RAT Capabilities" |         |
| Other Information elements                        |          |   |   |  |         |
| >UE system specific capability                    | OP       | 1 to<br><maxsyste<br>mCapabilit<br/>y&gt;</maxsyste<br> |   |  |         |
| >>Inter-RAT UE radio access capability            | MP       |   | Inter-RAT UE radio access capability 10.3.8.7                         |  |         |
| UTRAN Mobility Information elements               |          |   |   |  |         |
| >URA Identifier                                   | OP       |   | URA identity<br>10.3.2.6  |  |         |
| >T305   | OP       |   | Integer (5,<br>10, 30, 60,<br>120, 360,<br>720, infinity)             | If UE is in CELL_FACH state, this information element shall be included. Value in minutes. Infinity means no update.   | REL-7   |
| CN Information Elements                           |          |   |   | ,  |         |
| >CN common GSM-MAP NAS system information         | MP       |   | NAS system<br>information<br>(GSM-MAP)<br>10.3.1.9                    |  |         |
| >CN domain related information                    | OP       | 1 to<br><maxcndo<br>mains&gt;</maxcndo<br>              |   | CN related information to be provided for each CN domain   |         |
| >>CN domain identity                              | MP       |   |   |  |         |
| >>CN domain specific GSM-<br>MAP NAS system info  | MP       |   | NAS system<br>information<br>(GSM-MAP)<br>10.3.1.9                    |  |         |
| >>CN domain specific DRX cycle length coefficient | MP       |   | CN domain<br>specific DRX<br>cycle length<br>coefficient,<br>10.3.3.6 |  |         |
| Measurement Related<br>Information elements       |          |   |   |  |         |
| >For each ongoing measurement reporting           | OP       | 1 to<br><maxnoof<br>Meas&gt;</maxnoof<br>               |   | The source RNC should include the measurement IEs for each measurement configured and ongoing in the UE.   |         |
| >>Measurement Identity                            | MP       |   | Measuremen<br>t identity<br>10.3.7.48                                 |  |         |
| >>Measurement Command                             | MP       |   | Measuremen<br>t command<br>10.3.7.46                                  | This IE should have the value Setup.   |         |
| >>Measurement Type                                | CV-Setup |   | Measuremen  |  |         |

| Information Element/Group<br>Name                  | Need     | Multi | Type and reference  | Semantics description | Version |
|--|----------|-------|---|-----------------------|---------|
|  |          |       | t type<br>10.3.7.50   |                       |         |
| >>Measurement Reporting Mode                       | OP       |       | Measuremen<br>t reporting<br>mode<br>10.3.7.49                            |                       |         |
| >>Additional Measurements list                     | OP       |       | Additional measuremen ts list 10.3.7.1                                    |                       |         |
| >>CHOICE Measurement                               | CV-Setup |       | 10.0.7.1  |                       |         |
| >>>Intra-frequency                                 | 0.0      |       |   |                       |         |
| >>>>Intra-frequency cell info                      | OP       |       | Intra-<br>frequency<br>cell info list<br>10.3.7.33                        |                       |         |
| >>>Intra-frequency<br>measurement<br>quantity      | OP       |       | Intra-<br>frequency<br>measuremen<br>t quantity<br>10.3.7.38              |                       |         |
| >>>Intra-frequency reporting quantity              | OP       |       | Intra-<br>frequency<br>reporting<br>quantity<br>10.3.7.41                 |                       |         |
| >>>Reporting cell status                           | OP       |       | Reporting cell status 10.3.7.61   |                       |         |
| >>>Measurement validity                            | OP       |       | Measuremen<br>t validity<br>10.3.7.51                                     |                       |         |
| >>>>CHOICE report criteria                         | OP       |       |   |                       |         |
| >>>>Intra-frequency measurement reporting criteria |          |       | Intra-<br>frequency<br>measuremen<br>t reporting<br>criteria<br>10.3.7.39 |                       |         |
| >>>>Periodical reporting                           |          |       | Periodical reporting criteria 10.3.7.53                                   |                       |         |
| >>>>No reporting >>>Inter-frequency                |          |       | NULL  |                       |         |
| >>>Inter-frequency cell info                       | OP       |       | Inter-<br>frequency<br>cell info list<br>10.3.7.13                        |                       |         |
| >>>Inter-frequency<br>measurement<br>quantity      | OP       |       | Inter-<br>frequency<br>measuremen<br>t quantity<br>10.3.7.18              |                       |         |
| >>>Inter-frequency reporting quantity              | OP       |       | Inter-<br>frequency<br>reporting<br>quantity<br>10.3.7.21                 |                       |         |
| >>>Reporting cell status                           | ОР       |       | Reporting cell status 10.3.7.61   |                       |         |
| >>>Measurement validity                            | OP       |       | Measuremen<br>t validity<br>10.3.7.51                                     |                       |         |

| Information Element/Group Name                  | Need     | Multi        | Type and reference      | Semantics description | Version |
|---|----------|--------------|-------------------------|-----------------------|---------|
| >>>>Inter-frequency set update                  | OP       |              | Inter-                  |                       |         |
|   |          |              | frequency               |                       |         |
|   |          |              | set update              |                       |         |
| LANCHOICE report evitorie                       | OP       |              | 10.3.7.22               |                       |         |
| >>>>CHOICE report criteria >>>>>Intra-frequency | UP       |              | Intra-                  |                       |         |
| measurement reporting criteria                  |          |              | frequency               |                       |         |
| measurement reporting chiena                    |          |              | measuremen              |                       |         |
|   |          |              | t reporting             |                       |         |
|   |          |              | criteria                |                       |         |
|   |          |              | 10.3.7.39               |                       |         |
| >>>>Inter-frequency                             |          |              | Inter-                  |                       |         |
| measurement                                     |          |              | frequency               |                       |         |
| reporting criteria                              |          |              | measuremen              |                       |         |
|   |          |              | t reporting             |                       |         |
|   |          |              | criteria                |                       |         |
|   |          |              | 10.3.7.19               |                       |         |
| >>>>Periodical reporting                        |          |              | Periodical              |                       |         |
|   |          |              | reporting               |                       |         |
|   |          |              | criteria<br>10.3.7.53   |                       |         |
| >>>>No reporting                                |          |              | NULL                    |                       |         |
| >>>Inter-RAT                                    |          |              | NOLL                    |                       |         |
| >>>Inter-RAT                                    | OP       |              | Inter-RAT               |                       |         |
| >>>IIIIder-IVAT Cell IIIIIO                     | Oi       |              | cell info list          |                       |         |
|   |          |              | 10.3.7.23               |                       |         |
| >>>Inter-RAT measurement                        | OP       |              | Inter-RAT               |                       |         |
| quantity  |          |              | measuremen              |                       |         |
|   |          |              | t quantity              |                       |         |
|   |          |              | 10.3.7.29               |                       |         |
| >>>>Inter-RAT reporting                         | OP       |              | Inter-RAT               |                       |         |
| quantity  |          |              | reporting               |                       |         |
|   |          |              | quantity                |                       |         |
|   |          |              | 10.3.7.32               |                       |         |
| >>>Reporting cell status                        | OP       |              | Reporting               |                       |         |
|   |          |              | cell status             |                       |         |
| >>>Measurement validity                         | OP       |              | 10.3.7.61<br>Measuremen |                       |         |
| >>>>ivieasurement validity                      | OF .     |              | t validity              |                       |         |
|   |          |              | 10.3.7.51               |                       |         |
| >>>CHOICE report criteria                       | OP       |              | 10.0.7.01               |                       |         |
| >>>>Inter-RAT measurement                       | <u> </u> |              | Inter-RAT               |                       |         |
| reporting criteria                              |          |              | measuremen              |                       |         |
| 3   |          |              | t reporting             |                       |         |
|   |          |              | criteria                |                       |         |
|   |          |              | 10.3.7.30               |                       |         |
| >>>>Periodical reporting                        |          |              | Periodical              |                       |         |
|   |          | 1            | reporting               |                       |         |
|   |          |              | criteria                |                       |         |
| No womenting or                                 |          | 1            | 10.3.7.53               |                       |         |
| >>>>No reporting                                |          |              | NULL                    |                       |         |
| >>>Traffic Volume >>>>Traffic volume            | OP       | <del> </del> | Traffic                 |                       |         |
| measurement                                     | OF       |              | volume                  |                       |         |
| Object  |          | 1            | measuremen              |                       |         |
| Object  |          | 1            | t object                |                       |         |
|   |          | 1            | 10.3.7.70               |                       |         |
| >>>>Traffic volume                              | OP       |              | Traffic                 |                       |         |
| measurement                                     |          | 1            | volume                  |                       |         |
| quantity  |          | 1            | measuremen              |                       |         |
|   |          | 1            | t quantity              |                       |         |
|   | <u> </u> | ļ            | 10.3.7.71               |                       |         |
| >>>Traffic volume reporting                     | OP       | 1            | Traffic                 |                       |         |
| quantity  |          | 1            | volume                  |                       |         |
|   |          | <u> </u>     | reporting               |                       |         |

| Information Element/Group<br>Name                 | Need | Multi | Type and reference                                       | Semantics description | Version |
|---|------|-------|--|-----------------------|---------|
|   |      |       | quantity<br>10.3.7.74                                    |                       |         |
| >>>Measurement validity                           | OP   |       | Measuremen<br>t validity<br>10.3.7.51                    |                       |         |
| >>>CHOICE report criteria                         | OP   |       |  |                       |         |
| >>>>Traffic volume measurement reporting criteria |      |       | Traffic volume measuremen t reporting criteria 10.3.7.72 |                       |         |
| >>>>Periodical reporting                          |      |       | Periodical reporting criteria 10.3.7.53                  |                       |         |
| >>>>No reporting                                  |      |       | NULL   |                       |         |
| >>>Quality  |      |       | 0 "  |                       |         |
| >>>Quality measurement quantity                   | OP   |       | Quality<br>measuremen<br>t quantity<br>10.3.7.59         |                       |         |
| >>>>CHOICE report criteria                        | OP   |       |  |                       |         |
| >>>>Quality measurement reporting criteria        |      |       | Quality measuremen t reporting criteria 10.3.7.58        |                       |         |
| >>>>Periodical reporting                          |      |       | Periodical reporting criteria 10.3.7.53                  |                       |         |
| >>>>No reporting >>>UE internal                   |      |       | NULL   |                       |         |
| >>>UE internal measurement quantity               | OP   |       | UE internal<br>measuremen<br>t quantity<br>10.3.7.79     |                       |         |
| >>>UE internal reporting quantity                 | OP   |       | UE internal reporting quantity 10.3.7.82                 |                       |         |
| >>>>CHOICE report criteria                        | OP   |       |  |                       |         |
| >>>>UE internal measurement reporting criteria    |      |       | UE internal measuremen t reporting criteria 10.3.7.80    |                       |         |
| >>>>Periodical reporting                          |      |       | Periodical reporting criteria 10.3.7.53                  |                       |         |
| >>>>No reporting                                  |      |       | NULL   |                       |         |
| >>>UE positioning                                 |      |       |  |                       |         |
| >>>LCS reporting quantity                         | OP   |       | LCS<br>reporting<br>quantity<br>10.3.7.111               |                       |         |
| >>>>CHOICE report criteria                        | OP   |       |  |                       |         |
| >>>>LCS reporting criteria                        |      |       | LCS<br>reporting<br>criteria<br>10.3.7.110               |                       |         |
| >>>>Periodical reporting                          |      |       | Periodical reporting                                     |                       |         |

| Information Element/Group<br>Name                                   | Need | Multi                                     | Type and reference   | Semantics description            | Version |
|---|------|---|--|----------------------------------|---------|
|   |      |   | criteria<br>10.3.7.53  |                                  |         |
| >>>>No reporting  |      |   |  |                                  |         |
| Radio Bearer Information<br>Elements                                |      |   |  |                                  |         |
| >Predefined configuration status information                        | OP   |   | Predefined configuration status information 10.3.4.5a  |                                  |         |
| >Signalling RB information list                                     | MP   | 1 to<br><maxsrbs<br>etup&gt;</maxsrbs<br> |  | For each signalling radio bearer |         |
| >>Signalling RB information   | MP   |   | Signalling<br>RB<br>information<br>to setup<br>10.3.4.24                                       |                                  |         |
| >RAB information list   | OP   | 1 to<br><maxrabs<br>etup&gt;</maxrabs<br> |  | Information for each RAB         |         |
| >>RAB information   | MP   |   | RAB<br>information<br>to setup<br>10.3.4.10  |                                  |         |
| Transport Channel Information Elements                              |      |   |  |                                  |         |
| Uplink transport channels   |      |   |  |                                  |         |
| >UL Transport channel information common for all transport channels | OP   |   | UL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.24 |                                  |         |
| >UL transport channel information list                              | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br>     |  |                                  |         |
| >>UL transport channel information                                  | MP   |   | Added or<br>reconfigured<br>UL TrCH<br>information<br>10.3.5.2                                 |                                  |         |
| Downlink transport channels   |      |   |  |                                  |         |
| >DL Transport channel information common for all transport channels | OP   |   | DL Transport<br>channel<br>information<br>common for<br>all transport<br>channels<br>10.3.5.6  |                                  |         |
| >DL transport channel information list                              | OP   | 1 to<br><maxtrch<br>&gt;</maxtrch<br>     |  |                                  |         |
| >>DL transport channel information                                  | MP   |   | Added or reconfigured DL TrCH information 10.3.5.1   |                                  |         |

| Information Element/Group<br>Name                            | Need      | Multi                                | Type and reference   | Semantics description  | Version |
|--|-----------|--------------------------------------|--|--|---------|
| PhyCH information elements                                   |           |                                      |  |  |         |
| >TPC Combination Info list                                   | OP        | 1 to<br><maxrl></maxrl>              |  |  |         |
| >>Primary CPICH info   | MP        |                                      | Primary<br>CPICH info<br>10.3.6.60   |  |         |
| >>TPC combination index                                      | MP        |                                      | TPC combination index 10.3.6.85  |  |         |
| >Transmission gap pattern sequence                           | OP        | 1 to<br><maxtgp<br>S&gt;</maxtgp<br> |  |  | REL-5   |
| >>TGPSI  | MP        | 02                                   | TGPSI<br>10.3.6.82   |  | REL-5   |
| >> Current TGPS Status Flag                                  | MP        |                                      | Enumerated(<br>active,<br>inactive)  | This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it is active or inactive  | REL-5   |
| >>TGCFN  | CV-Active |                                      | Integer<br>(0255)  | Connection Frame Number of<br>the latest past frame of the first<br>pattern within the<br>Transmission Gap Pattern<br>Sequence.  | REL-5   |
| >>Transmission gap pattern sequence configuration parameters | OP        |                                      |  |  | REL-5   |
| >>>TGMP  | MP        |                                      | Enumerated(<br>TDD<br>measuremen<br>t, FDD<br>measuremen<br>t, GSM<br>carrier RSSI<br>measuremen<br>t, GSM Initial<br>BSIC<br>identification,<br>GSM BSIC<br>re-<br>confirmation,<br>Multi-carrier<br>measuremen<br>t) | Transmission Gap pattern sequence Measurement Purpose.   | REL-5   |
| >>>TGPRC   | MP        |                                      | Integer<br>(1511,<br>Infinity)   | The number of remaining transmission gap patterns within the Transmission Gap Pattern Sequence.  | REL-5   |
| >>>TGSN  | MP        |                                      | Integer<br>(014)   | Transmission Gap Starting Slot Number The slot number of the first transmission gap slot within the TGCFN.   | REL-5   |
| >>>TGL1  | MP        |                                      | Integer(114  | The length of the first Transmission Gap within the transmission gap pattern expressed in number of slots  | REL-5   |
| >>>TGL2  | MD        |                                      | Integer<br>(114)   | The length of the second Transmission Gap within the transmission gap pattern. If omitted, then TGL2=TGL1. The value of TGL2 shall be ignored if TGD is set to "undefined" | REL-5   |
| >>>TGD   | MP        |                                      | Integer(152<br>69,   | Transmission gap distance indicates the number of slots  | REL-5   |

| Information Element/Group Name      | Need | Multi | Type and reference                                  | Semantics description  | Version |
|-------------------------------------|------|-------|---|--|---------|
|                                     |      |       | undefined)  | between starting slots of two consecutive transmission gaps within a transmission gap pattern. If there is only one transmission gap in the transmission gap pattern, this parameter shall be set to undefined.                |         |
| >>>TGPL1                            | MP   |       | Integer<br>(1144)                                   | The duration of transmission gap pattern 1.  | REL-5   |
| >>>RPP                              | MP   |       | Enumerated<br>(mode 0,<br>mode 1).                  | Recovery Period Power control mode during the frame after the transmission gap within the compressed frame. Indicates whether normal PC mode or compressed PC mode is applied  | REL-5   |
| >>>ITP                              | MP   |       | Enumerated<br>(mode 0,<br>mode 1).                  | Initial Transmit Power is the uplink power control method to be used to compute the initial transmit power after the compressed mode gap.  | REL-5   |
| >>>CHOICE UL/DL mode                | MP   |       |   |  | REL-5   |
| >>>DL only                          |      |       |   | Compressed mode used in DL only  | REL-5   |
| >>>>Downlink compressed mode method | MP   |       | Enumerated<br>(SF/2, higher<br>layer<br>scheduling) | Method for generating<br>downlink compressed mode<br>gap   | REL-5   |
| >>>>UL only                         |      |       |   | Compressed mode used in UL only  | REL-5   |
| >>>>Uplink compressed mode method   | MP   |       | Enumerated<br>(SF/2, higher<br>layer<br>scheduling) | Method for generating uplink compressed mode gap   | REL-5   |
| >>>>UL and DL                       |      |       | Jestie damiig/                                      | Compressed mode used in UL and DL  | REL-5   |
| >>>>Downlink compressed mode method | MP   |       | Enumerated (SF/2, higher layer scheduling)          | Method for generating<br>downlink compressed mode<br>gap   | REL-5   |
| >>>>Uplink compressed mode method   | MP   |       | Enumerated<br>(SF/2, higher<br>layer<br>scheduling) | Method for generating uplink compressed mode gap   | REL-5   |
| >>>Downlink frame type              | MP   |       | Enumerated (A, B)                                   |  | REL-5   |
| >>>DeltaSIR1                        | MP   |       | Real(03 by<br>step of 0.1)                          | Delta in DL SIR target value to<br>be set in the UE during the<br>frame containing the start of<br>the first transmission gap in<br>the transmission gap pattern<br>(without including the effect of<br>the bit-rate increase) | REL-5   |
| >>>DeltaSIRafter1                   | MP   |       | Real(03 by<br>step of 0.1)                          | Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the first transmission gap in the transmission gap pattern.   | REL-5   |
| >>>DeltaSIR2                        | OP   |       | Real(03 by<br>step of 0.1)                          | Delta in DL SIR target value to<br>be set in the UE during the<br>frame containing the start of<br>the second transmission gap<br>in the transmission gap pattern  | REL-5   |

| Information Element/Group<br>Name | Need                      | Multi                   | Type and reference                                   | Semantics description   | Version |
|-----------------------------------|---------------------------|-------------------------|--|---|---------|
|                                   |                           |                         |  | (without including the effect of<br>the bit-rate increase)<br>When omitted, DeltaSIR2 =<br>DeltaSIR1.   |         |
| >>>DeltaSIRafter2                 | OP                        |                         | Real(03 by<br>step of 0.1)                           | Delta in DL SIR target value to<br>be set in the UE one frame<br>after the frame containing the<br>start of the second<br>transmission gap in the<br>transmission gap pattern.<br>When omitted, DeltaSIRafter2<br>= DeltaSIRafter1. | REL-5   |
| >>>N Identify abort               | CV-Initial<br>BSIC        |                         | Integer(112<br>8)                                    | Indicates the maximum number of repeats of patterns that the UE shall use to attempt to decode the unknown BSIC of the GSM cell in the initial BSIC identification procedure  | REL-5   |
| >>>T Reconfirm abort              | CV-Re-<br>confirm<br>BSIC |                         | Real(0.510.<br>0 by step of<br>0.5)                  | Indicates the maximum time allowed for the re-confirmation of the BSIC of one GSM cell in the BSIC re-confirmation procedure. The time is given in steps of 0.5 seconds.  | REL-5   |
| >Scrambling Code Change List      | CH-SF/2                   | 1 to<br><maxrl></maxrl> |  |   | REL-5   |
| >>Primary CPICH info              | MP                        |                         | Primary<br>CPICH info<br>10.3.6.60                   |   | REL-5   |
| >>Scrambling code change          | MP                        |                         | Enumerated<br>(code<br>change, no<br>code<br>change) | Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.  | REL-5   |
| Other Information elements        |                           |                         |  |   |         |
| >Measurement report               | OP                        |                         | MEASUREM<br>ENT<br>REPORT<br>10.2.19                 | The source RNC should include the Measurement report the UE sent that triggered the SRNS relocation. This information could e.g. be used by the target RNC to set initial power when establishing a DCH.                            |         |
| >Failure cause                    | OP                        |                         | Failure<br>cause<br>10.3.3.13                        | Diagnostics information related<br>to an earlier SRNC Relocation<br>request (see NOTE 2 in<br>14.12.0a)   |         |
| >Protocol error information       | CV-ProtErr                |                         | Protocol<br>error<br>information<br>10.3.8.12        |   |         |
| MBMS joined information           | OP                        |                         |  | Included if the UE has joined one or more MBMS services   | REL-6   |
| >P-TMSI                           | OP                        |                         | P-TMSI<br>(GSM-MAP)<br>10.3.1.13                     | In case the UE is in PMM-Idle   | REL-6   |
| MBMS Selected Service Info        | OP                        |                         | MBMS<br>Selected<br>Services Info<br>10.3.9a.7b      |   | REL-6   |

| Multi Bound | Explanation                                  |
|-------------|--|
| MaxNoOfMeas | Maximum number of active measurements, upper |
|             | limit 16                                     |

| Condition       | Explanation   |
|-----------------|---|
| Setup           | The IE is mandatory present when the IE   |
|                 | Measurement command has the value "Setup",  |
|                 | otherwise the IE is not needed.   |
| Ciphering       | The IE is mandatory present when the IE Ciphering   |
|                 | Status has the value "started" and the ciphering  |
|                 | counters need not be reinitialised, otherwise the IE is   |
| 10              | not needed.   |
| IP              | The IE is mandatory present when the IE Integrity   |
|                 | protection status has the value "started" and the   |
|                 | integrity protection counters need not be reinitialised, otherwise the IE is not needed.              |
| ProtErr ProtErr |   |
| PIOLEII         | This IE is mandatory present if the IE "Protocol error indicator" is included and has the value TRUE. |
|                 | Otherwise it is not needed.   |
| SRB1            | The IE is mandatory present for RB1. Otherwise it is  |
| SNDT            | not needed.   |
| Active          | This IE is mandatory present when the value of the IE   |
| 7600            | "Current TGPS Status Flag" is "Active" and not  |
|                 | needed otherwise.   |
| Initial BSIC    | This IE is mandatory present when the value of the IE   |
|                 | "TGMP" is set to "GSM Initial BSIC identification" and  |
|                 | not needed otherwise.   |
| Re-confirm BSIC | This IE is mandatory present when the value of the IE   |
|                 | "TGMP" is set to "GSM BSIC re-confirmation" and not   |
|                 | needed otherwise.   |
| SF/2            | The IE is mandatory present if the IE "Transmission   |
|                 | Gap Pattern Sequence" is included and has the value   |
|                 | "SF/2" as the compressed mode method, and already   |
|                 | sent the UE the IE "Scrambling Code Change" for   |
|                 | each RL in the active set. Otherwise the IE is not  |
|                 | needed.   |

#### 14.12.4.3 Void

#### 14.12.4.4 RFC 3095 CONTEXT INFO

This RRC message is sent between network nodes in SRNS relocation. It is used to transfer the compressor and decompressor context information of the RFC 3095 protocol.

Direction: source RNC →target RNC

| Information Element/Group name        | Need | Multi  | Type and reference           | Semantics description  | Version |
|---------------------------------------|------|--|------------------------------|--|---------|
| RFC 3095 context                      | MP   | 1 to<br><maxrball<br>RABs&gt;</maxrball<br>  |                              |  | REL-5   |
| >RB identity                          | MP   | KAD5>  | RB identity<br>10.3.4.16     |  | REL-5   |
| >RFC 3095 context list                | MP   | 1 to<br><maxrfc3<br>095-CID&gt;</maxrfc3<br> |                              |  | REL-5   |
| >>Downlink RFC 3095 context           | OP   |  |                              |  | REL-5   |
| >>>Downlink RFC 3095 context identity | MP   |  | Integer<br>(016383)          |  | REL-5   |
| >>>DL_MODE                            | MP   |  | Enumerated (u, o, r)         | RFC 3095 mode in downlink before SRNS relocation.  | REL-5   |
| >>>REF_IR                             | MP   |  | Octet string (13000)         | The RTP IR header (see section 5.7.7 of RFC3095 for detailed format) corresponding to the oldest header in the compressor sliding window.  | REL-5   |
| >>>REF_TIME                           | OP   |  | Integer<br>(04294967<br>295) | Arrival time (at the compressor) of REF_IR in milliseconds. See sections 4.5.4 and 6.5.1 of RFC3095.   | REL-5   |
| >>>CURR_TIME                          | OP   |  | Integer<br>(04294967<br>295) | Current time in milliseconds. See section 6.5.1 of RFC3095.  | REL-5   |
| >>>SYN_OFFSET_ID                      | OP   |  | Integer<br>(065535)          | Last synchronized offset of IP-ID. See section 4.5.5 and 6.5.1 of RFC3095 (termed "Offset_I").  It is related to the compression and decompression of IP-ID and is the synchronized offset between the IP-ID value and the SN value (in the same header) during the last SO state before the relocation procedure. | REL-5   |
| >>>SYN_SLOPE_TS                       | OP   |  | Integer<br>(04294967<br>295) | Last synchronized slope of TS. See sections 5.5.1.2 and 5.7 of RFC3095.  In SO state, TS(n) = TS(m) + (n-m) * SYN_SLOPE_TS, where n and m are, the RTP SN of the current and   | REL-5   |

|                                     |       |   |                     | the reference                     |       |
|-------------------------------------|-------|---|---------------------|-----------------------------------|-------|
|                                     |       |   |                     | packet,                           |       |
|                                     |       |   |                     | respectively. The                 |       |
|                                     |       |   |                     | unit of                           |       |
|                                     |       |   |                     | SYN_SLOPE_TS                      |       |
|                                     |       |   |                     | depends on whether TS is          |       |
|                                     |       |   |                     | scaled before                     |       |
|                                     |       |   |                     | compression or                    |       |
|                                     |       |   |                     | not.                              |       |
| >>>DYN_CHANGED                      | MP    |   | Boolean             | Information                       | REL-5 |
|                                     |       |   |                     | whether dynamic                   |       |
|                                     |       |   |                     | fields other than RTP SN, RTP TS  |       |
|                                     |       |   |                     | and IP-ID have                    |       |
|                                     |       |   |                     | changed in the                    |       |
|                                     |       |   |                     | headers that are                  |       |
|                                     |       |   |                     | stored in the                     |       |
|                                     |       |   |                     | sliding window.                   |       |
|                                     |       |   |                     | Set to TRUE if                    |       |
|                                     |       |   |                     | changed and                       |       |
|                                     |       |   |                     | FALSE if not                      |       |
|                                     |       |   |                     | changed.                          |       |
| >>Uplink RFC 3095 context           | OP MD |   | Intoria             |                                   | REL-5 |
| >>>Uplink RFC 3095 context identity | MP    |   | Integer<br>(016383) |                                   | REL-5 |
| >>>UL_MODE                          | MP    |   | Enumerated          | RFC 3095 mode                     | REL-5 |
|                                     |       |   | (u, o, r)           | in uplink                         |       |
| >>>REF_IR                           | MP    |   | Octet string        | The RTP IR                        | REL-5 |
|                                     |       |   | (13000)             | header (see                       |       |
|                                     |       |   |                     | section 5.7.7 of                  |       |
|                                     |       |   |                     | IETF RFC3095 for                  |       |
|                                     |       |   |                     | detailed format) corresponding to |       |
|                                     |       |   |                     | the last correctly                |       |
|                                     |       |   |                     | decompressed                      |       |
|                                     |       |   |                     | header.                           |       |
| >>>REF_TIME                         | OP    |   | Integer             | Arrival time (at the              | REL-5 |
|                                     |       |   | (04294967           | decompressor) of                  |       |
|                                     |       |   | 295)                | REF_IR in                         |       |
|                                     |       |   |                     | milliseconds.                     |       |
|                                     |       |   |                     | See sectionss                     |       |
|                                     |       |   |                     | 4.5.4 and 6.5.1 of RFC3095.       |       |
| >>>CURR_TIME                        | OP    |   | Integer             | Current time in                   | REL-5 |
|                                     |       |   | (04294967           | milliseconds. See                 |       |
|                                     |       |   | 295)                | section 6.5.1 of                  |       |
|                                     | 1     |   |                     | RFC3095.                          |       |
| >>>SYN_OFFSET_ID                    | OP    |   | Integer             | Last synchronized                 | REL-5 |
|                                     |       | 1 | (065535)            | offset of IP-ID.                  |       |
|                                     |       | 1 |                     | See sectionss                     |       |
|                                     |       | 1 |                     | 4.5.5 and 6.5.1 of<br>RFC3095     |       |
|                                     |       | 1 |                     | (termed"Offset_I")                |       |
|                                     |       |   |                     | (torrilou oriset_r)               |       |
|                                     |       |   |                     |                                   |       |
|                                     |       |   |                     | It is related to the              |       |
|                                     |       |   |                     | compression and                   |       |
|                                     |       |   |                     | decompression of                  |       |
|                                     |       | 1 |                     | IP-ID and is the                  |       |
|                                     |       |   |                     | synchronized offset between the   |       |
|                                     |       | 1 |                     | IP-ID value and                   |       |
|                                     |       | 1 |                     | the SN value (in                  |       |
|                                     |       | 1 |                     | the same header)                  |       |
|                                     |       | 1 |                     | during the last SO                |       |
|                                     |       | 1 |                     | state before the                  |       |
| T .                                 | 1     | 1 | 1                   | relocation                        | l     |

|                 |    |                              | procedure.  |       |
|-----------------|----|------------------------------|---|-------|
| >>>SYN_SLOPE_TS | OP | Integer<br>(04294967<br>295) | Last synchronized slope of TS. See sectionss 5.5.1.2 and 5.7 of RFC3095.  In SO state, TS(n) = TS(m) + (n-m) * SYN_SLOPE_TS, where n and m are, the RTP SN of the current and the reference packet, respectively. The unit of SYN_SLOPE_TS depends on whether TS is scaled before compression or not. | REL-5 |
| >>>REF_SN_1     | OP | Integer<br>(065535)          | Corresponds to the RTP Sequence Number of the predecessor of the latest RTP packet. This could be used to perform local repair of context by decompressor in U or O mode (see "ref - 1" in section5.3.2.2.5 in IETF RFC3095 for further explanation).   | REL-5 |

14.13 Void

14.14 Void

# Annex A (informative): USIM parameters

## A.1 Introduction

This annex contains recommendations about the RRC parameters to be stored in the USIM.

## A.2 Ciphering information

| Information Element/Group name             | Need | Multi                      | Type and reference  | Semantics description                    |
|--|------|----------------------------|---------------------|--|
| Cipher key for each CN domain              | MP   | <1 to<br>maxCNDo<br>mains> |                     | Cipher key is described in [40].         |
| >CK  | MP   |                            | Bit string<br>(128) |  |
| Integrity key for each CN domain           | MP   | <1 to<br>maxCNDo<br>mains> |                     | Integrity key is described in [40].      |
| >IK  | MP   |                            | Bit string<br>(128) |  |
| THRESHOLD                                  | MP   |                            | Bit string (20)     |  |
| START value for each CN domain             | MP   | <1 to<br>maxCNDo<br>mains> |                     | START value is described in [40].        |
| >START                                     | MP   |                            | Bit string (20)     |  |
| KSI, Key set identifier for each CN domain | MP   | <1 to<br>maxCNDo<br>mains> |                     | Key set identifier is described in [40]. |
| >KSI                                       | MP   |                            | Bit string (3)      |  |

# A.3 Frequency information

Neighbour cell list.

| Information Element/Group name | Need | Multi                            | Type and reference                 | Semantics description                        | Version |
|--------------------------------|------|----------------------------------|------------------------------------|--|---------|
| FDD cell list                  | OP   | <1 to<br>maxFDDFr<br>eqList>     |                                    |  |         |
| >UARFCN downlink (Nd)          | MP   | ·                                | Integer(0<br>16383)                | [21]   |         |
| >Primary scrambling code       | OP   | <1 to<br>maxFDDFr<br>eqCellList> | Primary<br>CPICH info<br>10.3.6.60 |  |         |
| 3.84 Mcps TDD cell list        | OP   | <1 to<br>maxTDDFr<br>eqList>     |                                    |  |         |
| >UARFCN (Nt)                   | MP   |                                  | Integer(0<br>16383)                | [22]   |         |
| >Cell parameters ID            | OP   | <1 to<br>maxTDDFr<br>eqCellList> | Integer<br>(0127)                  | The Cell parameters ID is described in [32]. |         |
| 1.28 Mcps TDD cell list        | OP   | <1 to<br>maxTDDFr<br>eqList>     |                                    |  | REL-4   |
| >UARFCN (Nt)                   | MP   |                                  | Integer(0                          | [22]   | REL-4   |

| Information Element/Group | Need | Multi       | Type and  | Semantics          | Version |
|---------------------------|------|-------------|-----------|--------------------|---------|
| name                      |      |             | reference | description        |         |
|                           |      |             | 16383)    |                    |         |
| >Cell parameters ID       | OP   | <1 to       | Integer   | The Cell           | REL-4   |
|                           |      | maxTDDFr    | (0127)    | parameters ID is   |         |
|                           |      | eqCellList> |           | described in [32]. |         |
| GSM Neighbour cell list   | OP   |             |           |                    |         |
| >GSM neighbour cell info  | MP   | <1 to       |           |                    |         |
| _                         |      | maxGSMC     |           |                    |         |
|                           |      | ellList>    |           |                    |         |
| >>BSIC                    | MP   |             |           |                    |         |
| >>BCCH ARFCN              | MP   |             |           |                    |         |

# A.4 Multiplicity values and type constraint values

| Constant              | Explanation  | Value |
|-----------------------|--|-------|
| Ciphering information |  |       |
| maxCNDomains          | Maximum number of CN domains   | 4     |
| Frequency information |  |       |
| maxFDDFreqList        | Maximum number of FDD carrier frequencies to be stored in USIM               | 4     |
| maxTDDFreqList        | Maximum number of TDD carrier frequencies to be stored in USIM               | 4     |
| maxFDDFreqCellList    | Maximum number of neighbouring FDD cells on one carrier to be stored in USIM | 32    |
| maxTDDFreqCellList    | Maximum number of neighbouring TDD cells on one carrier to be stored in USIM | 32    |
| maxGSMCellList        | Maximum number of GSM cells to be stored in USIM                             | 32    |

# Annex B (informative): Description of RRC state transitions

This annex contains Stage 2 description of RRC states and state transitions.

## B.1 RRC states and state transitions including GSM

After power on, the UE stays in Idle Mode until it transmits a request to establish an RRC Connection. In Idle Mode the connection of the UE is closed on all layers of the access stratum. In Idle Mode the UE is identified by non-access stratum identities such as IMSI, TMSI and P-TMSI. In addition, the UTRAN has no own information about the individual Idle Mode UEs, and it can only address e.g. all UEs in a cell or all UEs monitoring a paging occasion. The UE behaviour within this mode is described in [4].

The UTRA RRC Connected Mode is entered when the RRC Connection is established. The UE is assigned a radio network temporary identity (RNTI) to be used as UE identity on common transport channels.

The RRC states within UTRA RRC Connected Mode reflect the level of UE connection and which transport channels that can be used by the UE.

For inactive stationary data users the UE may fall back to PCH on both the Cell and URA levels. That is, upon the need for paging, the UTRAN checks the current level of connection of the given UE, and decides whether the paging message is sent within the URA, or should it be sent via a specific cell.

#### B.2 Transition from Idle Mode to UTRA RRC Connected Mode

The transition to the UTRA RRC Connected Mode from the Idle Mode can only be initiated by the UE by transmitting a request for an RRC Connection. The event is triggered either by a paging request from the network or by a request from upper layers in the UE.

When the UE receives a message from the network that confirms the RRC connection establishment, the UE enters the CELL\_FACH or CELL\_DCH state of UTRA RRC Connected Mode.

In the case of a failure to establish the RRC Connection the UE goes back to Idle Mode. Possible causes are radio link failure, a received reject response from the network or lack of response from the network (timeout).

## B.2.1 Transitions for Emergency Calls

Refer to [4] for all states and procedures referred to in this subclause. When UE leaves idle mode from state *Camped on any cell* in order to make an emergency call, moving to state *Connected mode (emergency calls only)*, the UE shall attempt to access the current serving cell. If the access attempt to the serving cell fails the UE shall use the *Cell Reselection* procedure. If no acceptable cell is found, the UE shall use the *Any cell selection*. When returning to idle mode, the UE shall use the procedure *Cell selection when leaving connected mode* in order to find an acceptable cell to camp on, state *Camped on any cell*.

#### B.3 UTRA RRC Connected Mode States and Transitions

#### B.3.1 CELL\_DCH state

The CELL\_DCH state is characterised by

- For TDD: A dedicated physical channel is allocated to the UE in uplink and downlink or a dedicated physical channel is allocated to the UE in the uplink and HS\_DSCH\_RECEPTION is set to TRUE.

- A dedicated physical channel is allocated to the UE in uplink and downlink.
- For TDD:
  - E\_DCH\_TRANSMISSION is set to TRUE and HS\_DSCH\_RECEPTION is set to TRUE.
  - E\_DCH\_TRANSMISSION is set to TRUE and a dedicated physical channel is allocated to the UE in the downlink.
- The UE is known on cell level according to its current active set.
- Dedicated transport channels, downlink and uplink (TDD) shared transport channels, and a combination of these transport channels can be used by the UE.

The CELL\_DCH-state is entered from the Idle Mode through the setup of an RRC connection, or by establishing a dedicated physical channel from the CELL\_FACH state.

In TDD a PDSCH may be assigned to the UE in this state, to be used for a DSCH. A PUSCH may also be assigned to the UE in this state, to be used for a USCH. If PDSCH or PUSCH are used for TDD, a FACH transport channel may be assigned to the UE for reception of physical shared channel allocation messages.

#### B.3.1.1 Transition from CELL\_DCH to Idle Mode

Transition to Idle Mode is realised through the release of the RRC connection.

#### B.3.1.2 Transition from CELL\_DCH to CELL\_FACH state

Transition to CELL\_FACH state occurs when all dedicated channels have been released, which may be

 a) via explicit signalling (e.g. PHYSICAL CHANNEL RECONFIGURATION, RADIO BEARER RECONFIGURATION, RADIO BEARER RELEASE, RADIO BEARER SETUP, TRANSPORT CHANNEL RECONFIGURATION, etc.).

at the end of the time period for which the dedicated channel was allocated (TDD)

#### B.3.1.3 Transition from CELL DCH to CELL PCH state

Transition to CELL\_PCH state occurs via explicit signalling (e.g. PHYSICAL CHANNEL RECONFIGURATION, RADIO BEARER RECONFIGURATION, RADIO BEARER RELEASE, RADIO BEARER SETUP, TRANSPORT CHANNEL RECONFIGURATION, etc.).

#### B.3.1.4 Transition from CELL\_DCH to URA\_PCH state

Transition to URA\_PCH state occurs via explicit signalling (e.g. PHYSICAL CHANNEL RECONFIGURATION, RADIO BEARER RECONFIGURATION, RADIO BEARER RELEASE, RADIO BEARER SETUP, TRANSPORT CHANNEL RECONFIGURATION, etc.).

#### B.3.1.5 Radio Resource Allocation tasks (CELL\_DCH)

For the DCH, several physical channel allocation strategies may be applied. The allocations can be either permanent (needing a DCH release message) or based on time or amount-of-data.

Resource allocation can be done separately for each packet burst with fast signalling on the DCH

For each radio frame the UE and the network indicate the current data rate (in uplink and downlink respectively) using the transport format combination indicator (TFCI). However, in TDD, DCH and DSCH or USCH may be mapped on different CCTrCHs, their TFCI are totally independent. DCH transmission is not modified by the simultaneous existence of DSCH/USCH. If the configured set of combinations (i.e. transport format set for one transport channel) are found to be insufficient to retain the QoS requirements for a transport channel, the network initiates a reconfiguration of the transport format set (TFS) for that transport channel. This reconfiguration can be done during or in between data transmission. Further, the network can reconfigure the physical channel allowing an increase or decrease of the peak data rate.

For the uplink data transmission, the UE reports the observed traffic volume to the network in order for the network to re-evaluate the current allocation of resources. This report contains e.g. the amount of data to be transmitted or the buffer status in the UE.

#### B.3.1.6 RRC Connection mobility tasks (CELL\_DCH)

Depending on the amount and frequency of data macrodiversity (soft handover) may or may not be applied.

The RRC Connection mobility is handled by measurement reporting, soft handover and Timing re-initialised or Timing-maintained hard handover procedures.

#### B.3.1.7 UE Measurements (CELL\_DCH)

The UE performs measurements and transmit measurement reports according to the measurement control information.

The UE uses the connected mode measurement control information received in other states until new measurement control information has been assigned to the UE.

#### B.3.1.8 Acquisition of system information (CELL\_DCH)

FDD UEs with certain capabilities reads system information broadcast on FACH.

TDD UEs reads the BCH to acquire valid system information. For each acquisition, the UE may need different combinations of system information broadcast on BCH. The scheduling on the broadcast channel is done in such way that the UE knows when the requested information can be found.

#### B.3.2 CELL FACH state

The CELL\_FACH state is characterised by:

- No dedicated physical channel is allocated to the UE.
- The UE continuously monitors in the downlink:
  - In TDD mode:
    - a FACH.
  - In FDD mode:
    - a FACH; or
    - an HS-DSCHs and optionally a FACH for MBMS reception.
- The UE is assigned a default common or shared transport channel in the uplink (e.g. RACH) that it can use anytime according to the access procedure for that transport channel.
- The position of the UE is known by UTRAN on cell level according to the cell where the UE last made a cell update.
- In TDD mode, one or several USCH or DSCH transport channels may have been established.

#### B.3.2.1 Transition from CELL\_FACH to CELL\_DCH state

A transition occurs, when a dedicated physical channel is established via explicit signalling (e.g. PHYSICAL CHANNEL RECONFIGURATION, RADIO BEARER RECONFIGURATION, RADIO BEARER RELEASE, RADIO BEARER SETUP, TRANSPORT CHANNEL RECONFIGURATION, etc.).

#### B.3.2.2 Transition from CELL FACH to CELL PCH state

The transition occurs when UTRAN orders the UE to move to CELL\_PCH state, which is done via explicit signalling (e.g. CELL UPDATE CONFIRM, RADIO BEARER RECONFIGURATION, etc.).

#### B.3.2.3 Transition from CELL FACH to Idle Mode

Upon release of the RRC connection, the UE moves to the idle mode.

#### B.3.2.4 Transition from CELL FACH to URA PCH State

The transition occurs when UTRAN orders the UE to move to URA \_PCH state, which is done via explicit signalling (e.g. URA UPDATE CONFIRM, RADIO BEARER RECONFIGURATION, etc.).

#### B.3.2.5 Radio Resource Allocation Tasks (CELL\_FACH)

For TDD, in the CELL\_ FACH state the UE will monitor a FACH.

For FDD in the CELL\_FACH state the UE will monitor a FACH, if the UE does not support HS-DSCH reception in CELL\_FACH state or IE "HS-DSCH common system information" is not included in the system information. Otherwise the UE will monitor the common HS-DSCH(s), and FACH monitoring is restricted to MBMS reception.

The UE is enabled to transmit uplink control signals and it may be able to transmit small data packets on the RACH.

The network can assign the UE transport channel parameters (e.g. transport format sets) in advance, to be used when a DCH is used. Upon assignment of the physical channel for DCH, the UE moves to CELL\_DCH state and uses the pre-assigned TFS for the DCH.

If no UE dedicated physical channel or transport channel configuration has been assigned, the UE uses the common physical channel and transport channel configuration according to the system information.

For the uplink data transmission, the UE reports the observed traffic volume to the network in order for the network to re-evaluate the current allocation of resources. This report contains e.g. the amount of data to be transmitted or the buffer status in the UE.

When there is either user or control data to transmit, a selection procedure determines whether the data should be transmitted on a common transport channel, or if a transition to CELL\_DCH should be executed. The selection is dynamic and depends on e.g. traffic parameters (amount of data, packet burst frequency).

In the TDD mode, the UTRAN can assign USCH / DSCH resources to the UE in CELL\_FACH state. When USCH / DSCH resources are assigned, the UE will continue to monitor FACHs, depending on the UE capability. The UE may use the USCH / DSCH to transmit signalling messages or user data in the uplink and / or the downlink using USCH and / or DSCH when resources are allocated to cell and UE is assigned use of those USCH / DSCH.

For the uplink data transmission on USCH the UE reports to the network the traffic volume (current size of RLC data buffers), The UTRAN can use these measurement reports to re-evaluate the current allocation of the USCH / DSCH resources.

#### B.3.2.6 RRC Connection mobility tasks (CELL FACH)

In this state the location of the UE is known on cell level. A cell update procedure is used to report to the UTRAN, when the UE selects a new cell to observe the common downlink channels of a new cell. Downlink data transmission on the FACH can be started without prior paging.

The UE monitors the broadcast channel and system information on BCCH of its own and neighbour cells and from this the need for the updating of cell location is identified.

The UE performs cell reselection and upon selecting a new UTRA cell, it initiates a cell update procedure. Upon selecting a new cell belonging to another radio access system than UTRA, the UE enters idle mode and makes an access to that system according to its specifications.

#### B.3.2.7 UE Measurements (CELL\_FACH)

The UE performs measurements and transmit measurement reports according to the measurement control information.

By default, the UE uses the measurement control information broadcast within the system information. However, for measurements for which the network also provides measurement control information within a MEASUREMENT CONTROL message, the latter information takes precedence.

#### B.3.2.8 Transfer and update of system information (CELL\_FACH)

The UE reads the BCH to acquire valid system information. For each acquisition, the UE may need different combinations of system information broadcast on BCH. The scheduling on the broadcast channel is done in such way that the UE knows when the requested information can be found.

When the system information is modified, the scheduling information is updated to reflect the changes in system information transmitted on BCH. The new scheduling information is broadcast on FACH and/or on the common HS-DSCH(s) (FDD only) in order to inform UEs about the changes. If the changes are applicable for the UE, the modified system information is read on BCH.

#### B.3.3 CELL\_PCH state

The CELL\_PCH state is characterised by:

- For FDD, if "HS-DSCH paging system information" is not included in System Information or the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state, and for TDD, no dedicated physical channel is allocated to the UE.

For FDD, if "HS-DSCH paging system information" is included in System Information and the UE does support HS-DSCH reception in CELL\_PCH and URA\_PCH state, dedicated physical channel may be allocated to the UE.

- For FDD, if "HS-DSCH paging system information" is not included in System Information or the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state, and for TDD, the UE selects a PCH with the algorithm specified in subclause 8.5.19, and uses DRX for monitoring the selected PCH via an associated PICH.
- For FDD, if "HS-DSCH paging system information" is included in System Information and the UE supports HS-DSCH reception in CELL\_PCH and URA\_PCH state, the UE selects a HS-DSCH mapped on the HS-PDSCH with algorithms specified in 8.5.41, 8.5.39 and 8.5.40, and uses DRX for monitoring the selected HS-DSCH via an associated PICH.
- No uplink activity is possible.
- The position of the UE is known by UTRAN on cell level according to the cell where the UE last made a cell update in CELL FACH state.

The DCCH and DTCH logical channels can only be used in this state if HS-DSCH is used and a dedicated H-RNTI is configured. Otherwise, if the network wants to initiate any activity, it needs to make a paging request on the PCCH logical channel in the known cell to initiate any downlink activity.

#### B.3.3.1 Transition from CELL\_PCH to CELL\_FACH state

The UE is transferred to CELL\_FACH state:

- a) by paging from UTRAN (PAGING TYPE1 message)
- b) through any uplink access

#### B.3.3.2 Radio Resource Allocation Tasks (CELL\_PCH)

In CELL\_PCH state no resources have been granted for data transmission. For this purpose, a transition to another state has to be executed.

The UE may use Discontinuous Reception (DRX) in order to reduce power consumption. When DRX is used the UE needs only to receive at one paging occasion per DRX cycle. The UE may be instructed to use specific DRX cycle lengths by the network. The UE determines its paging occasions in the same way as for Idle Mode, see [4].

#### B.3.3.3 RRC Connection mobility tasks (CELL\_PCH)

In the CELL\_PCH state, the UE mobility is performed through cell reselection procedures, which may differ from the one defined in [4].

The UE performs cell reselection and upon selecting a new UTRA cell, it moves to CELL\_FACH state and initiates a cell update procedure in the new cell. After the cell update procedure has been performed, the UE changes its state back to CELL PCH state if neither the UE nor the network has any more data to transmit.

Upon selecting a new cell belonging to another radio access system than UTRA, the UE enters idle mode and make an access to that system according to its specifications.

In case of low UE activity, UTRAN may want to reduce the cell-updating overhead by ordering the UE to move to the URA\_PCH State. This transition is made via the CELL\_FACH state. UTRAN may apply an inactivity timer, and optionally, a counter, which counts the number of cell updates e.g. UTRAN orders the UE to move to URA\_PCH when the number of cell updates has exceeded certain limits (network parameter).

#### B.3.3.4 UE Measurements (CELL\_PCH)

The UE performs measurements and transmit measurement reports according to the measurement control information.

The UE uses the measurement control information according to the system information when no UE dedicated measurement control information has been assigned.

#### B.3.3.5 Transfer and update of system information (CELL PCH)

The UE reads the BCH to acquire valid system information. For each acquisition, the UE may need different combinations of system information broadcast on BCH. The scheduling on the broadcast channel is done in such way that the UE knows when the requested information can be found.

#### B.3.4 URA\_PCH State

The URA PCH state is characterised by:

- No dedicated channel is allocated to the UE.
- For FDD, if "HS-DSCH paging system information" is not included in System Information or the UE does not support HS-DSCH reception in CELL\_PCH and URA\_PCH state, and for TDD, the UE selects a PCH with the algorithm specified in subclause 8.5.19, and uses DRX for monitoring the selected PCH via an associated PICH.
- For FDD, if "HS-DSCH paging system information" is included in System Information and the UE supports HS-DSCH reception in CELL\_PCH and URA\_PCH state, the UE selects a HS-DSCH mapped on the HS-PDSCH with algorithms specified in 8.5.41, 8.5.39 and 8.5.40, and uses DRX for monitoring the selected HS-DSCH via an associated PICH.
- No uplink activity is possible.
- The location of the UE is known on UTRAN Registration area level according to the URA assigned to the UE during the last URA update in CELL\_FACH state.

The DCCH logical channel cannot be used in this state. If the network wants to initiate any activity, it needs to make a paging request on the PCCH logical channel within the URA where the location of the UE is known. If the UE needs to transmit anything to the network, it goes to the CELL FACH state. The transition to URA PCH State can be controlled

with an inactivity timer, and optionally, with a counter that counts the number of cell updates. When the number of cell updates has exceeded certain limits (a network parameter), then the UE changes to the URA\_PCH State.

URA updating is initiated by the UE, which, upon the detection of the Registration area, sends the network the Registration area update information on the RACH of the new cell.

#### B.3.4.1 Transition from URA\_PCH State to CELL\_FACH State (URA\_PCH)

Any activity causes the UE to be transferred to CELL\_FACH State.

- a) Uplink access is performed by RACH.
- b) by paging from UTRAN ( PAGING TYPE1 message ).

NOTE: The release of an RRC connection is possible in the URA\_PCH state. UE in URA\_PCH is able to go to idle when triggered by paging type 1 message in case "Release indicator" has the value "Release".

#### B.3.4.2 Radio Resource Allocation Tasks (URA PCH)

In URA\_PCH State no resources have been granted for data transmission. For this purpose, a transition to CELL\_FACH State has to be executed.

The UE may use Discontinuous Reception (DRX) in order to reduce power consumption. When DRX is used the UE needs only to receive at one paging occasion per DRX cycle. The UE may be instructed to use specific DRX cycle lengths by the network. The UE determines its paging occasions in the same way as for Idle Mode, see [4].

#### B.3.4.3 RRC Connection mobility tasks (URA\_PCH)

In URA\_PCH State the location of a UE is known on UTRAN Registration area level.

In this state, the UE mobility is performed through URA reselection procedures, which may differ from the definitions in [4]. The UE performs cell reselection and upon selecting a new UTRA cell belonging to a URA that does not match the URA used by the UE, the UE moves to CELL\_FACH state and initiates a URA update towards the network. After the URA update procedure has been performed, the UE changes its state back to URA\_PCH state if neither the UE nor the network has any more data to transmit.

Upon selecting a new cell belonging to another radio access system than UTRA, the UE enters idle mode and makes an access to that system according to its specifications.

#### B.3.4.4 UE Measurements (URA\_PCH)

The UE performs measurements and transmit measurement reports according to the measurement control information.

The UE uses the measurement control information according to the system information when no UE dedicated measurement control information has been assigned.

#### B.3.4.5 Transfer and update of system information (URA\_PCH)

The same mechanisms to transfer and update system information as for state CELL\_PCH are applicable for UEs in URA\_PCH state.

# B.3.5 States and Transitions for Cell Reselection in URA\_PCH, CELL PCH, and CELL FACH

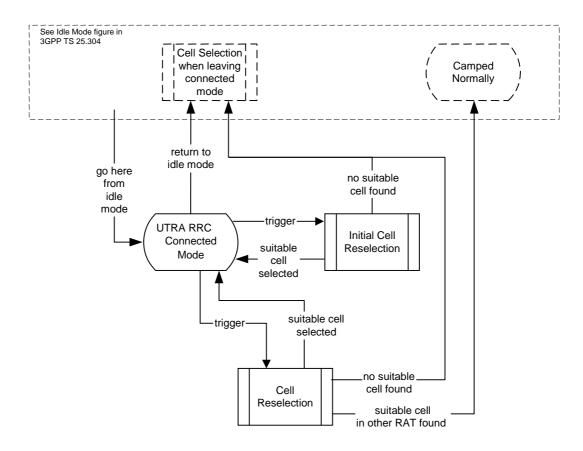


Figure B.3.5-1: UTRA RRC Connected mode cell reselection for URA\_PCH, CELL\_PCH, and CELL\_FACH

In some states the UE performs cell reselection procedures. The UE selects a suitable cell (defined in [4]) and radio access technology based on connected mode radio measurements and cell reselection criteria.

Figure B.3.5-1 shows the states and procedures in the cell reselection process in connected mode.

When a cell reselection is triggered, the UE evaluates the cell reselection criteria based on radio measurements, and if a better cell is found that cell is selected, procedure Cell reselection (see [4]). If the change of cell implies a change of radio access technology, the RRC connection is released, and the UE enters idle mode of the other RAT. If no suitable cell is found in the cell reselection procedure, the UE eventually enters idle mode.

When an Initial cell reselection is triggered, the UE shall use the Initial cell reselection procedure (see [4]) to find a suitable cell. One example where this procedure is triggered is at radio link failure, where the UE may trigger an initial cell reselection in order to request re-establishment of the RRC connection. If the UE is unable to find a suitable cell, the UE eventually enters idle mode.

#### B.4 Inter-RAT handover with CS domain services

When using CS domain services, UTRAN is using an Inter-Radio access system Handover Procedure and GSM is using a Handover procedure for the transition from UTRA RRC Connected Mode to GSM Connected Mode.

#### B.5 Inter-RAT handover with PS domain services

When using PS domain services, the UE can initiate cell reselection from a GSM/GPRS cell to a UTRAN cell and then uses the RRC Connection Establishment procedure for the transition to UTRA RRC Connected mode. It is also possible for the BSS to initiate a UTRA Inter-RAT Handover to seamlessly relocate the UE to UTRAN. In this latter case there is no need to return the UE to Idle Mode (GPRS Packet Idle Mode) and the UE immediately moves to RRC connected state in the UTRAN.

In the case that cell reselection is used, when the RRC Connection is established from Idle Mode (GPRS Packet Idle Mode) the RRC CONNECTION REQUEST message contains an indication, that UTRAN needs to continue an already established GPRS UE context from the CN. This indication allows UTRAN to e.g. prioritise the RRC CONNECTION REQUEST from the UE.

In UTRA RRC connected mode UTRAN may use UE or network initiated cell reselection to change from a UTRAN cell to a GSM/GPRS cell. If the cell reselection was successful the UE enters Idle Mode (GPRS Packet Idle Mode). The UE sends a packet channel request from Idle Mode (GPRS Packet Idle mode) to establish a Temporary Block flow and enter GPRS Packet Transfer Mode. In the GPRS Packet Transfer Mode the UE sends a RA Update request message. The RA Update Request message sent from the UE contains an indication that GSM/GPRS need to continue an already established UTRAN UE context from the CN. This means that the RA Update request is always sent for the transition from UTRA RRC Connected Mode to GSM/GPRS regardless if the RA is changed or not.

Alternatively, the UTRAN may use an Inter-System Relocation (PS Handover) to relocate a UTRA RRC connected UE directly to GPRS Packet Transfer Mode in GERAN.

NOTE: The reason for using RA update instead of a new message is to reduce the impact on the existing GSM/GPRS specification.

# B.6 Inter-RAT handover with simultaneous PS and CS domain services

#### B.6.1 Inter-RAT handover UTRAN to GSM / BSS

For a UE in CELL\_DCH state using both CS and PS Domain services the Inter-RAT handover procedure is based on measurement reports from the UE but initiated from UTRAN.

The UE performs the Inter-RAT handover from UTRA RRC Connected Mode to GSM Connected Mode first. When the UE has sent handover complete message to GSM / BSS the UE initiates a temporary block flow towards GPRS and sends a RA update request.

If the Inter-RAT handover from UTRA RRC Connected Mode to GSM Connected Mode was successful the handover is considered as successful regardless if the UE was able to establish a temporary block flow or not towards GPRS.

In case of Inter-RAT handover failure the UE has the possibility to go back to UTRA RRC Connected Mode and reestablish the connection in the state it originated from.

#### B.6.2 Inter-RAT handover GSM / BSS to UTRAN

For a UE in GSM Connected Mode using both CS and PS domain services the Inter-RAT handover procedure is based on measurement reports from the UE but initiated from GSM / BSS.

The UE performs the Inter-RAT handover from GSM Connected Mode to UTRA RRC Connected Mode.

In UTRA RRC Connected Mode both services are established in parallel.

If the Inter-RAT handover from GSM Connected mode to UTRA RRC Connected Mode was successful the handover is considered as successful.

In case of Inter-RAT handover failure the UE has the possibility to go back to GSM Connected Mode and re-establish the connection in the state it originated from.

## Annex C (informative):

# Description for the Compressed Coding of Pre-defined configurations included in the INTER RAT HANDOVER INFO message

This annex contains a description of the compressed coding of the IE "Predefined configuration status information compressed" (see subclause 10.3.4.5b) included in the INTER RAT HANDOVER INFO message.

#### C.1 Definitions

**Pre-defined configuration set with different value tags:** This is a set of consecutive positions for which pre-defined configurations are stored with different value tags. The set cannot include positions for which no pre-defined configuration is stored.

**Pre-defined configuration list with variable size:** This is the variable sized list consisting of the value tags corresponding to the remaining positions after the "Pre-defined configuration sets with different value tags" have been formed. This will also indicate not stored pre-defined configurations, either explicitly or implicitly (i.e. in the case that there are no more stored configurations until the end of the variable sized list). This is highlighted in figures C.2-1 and C.2-2.

## C.2 Examples of the methodology

From figure C.2-1 it can be seen that there are two "Pre-defined configuration sets with different value tags".

The start position of Set1 is "1" with a list of 7 pre-defined configurations {1, 2, 3, 4, 5, 6, 7}.

The start position of Set2 is "10" with a list of 6 pre-defined configurations {10, 11, 12, 13, 14, 15}.

The "Pre-defined configurations list with variable size" has a start position of 0, and includes all of the pre-defined configurations not included in the sets {0, 8, 9}. The value tag at position 9 is not stored. This does not need to be explicitly indicated in the coding as "not stored" because there are no stored pre-defined configurations positioned after this in the list.

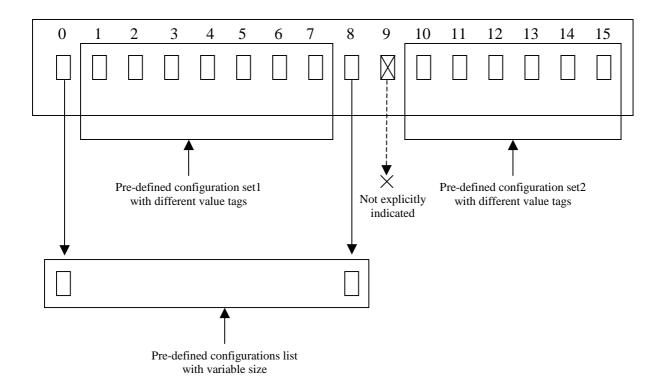


Figure C.2-1: Example scenario where non-stored pre-defined configurations do not need to be explicitly indicated

Figure C.2-2 is similar to Figure C.2-1. However in this case for the "Pre-defined configurations list with variable size", the pre-defined configuration in position 8 is not stored. This needs to be explicitly indicated in the coding as "not stored" because there is a stored pre-defined configuration (position 9) positioned after this in the list.

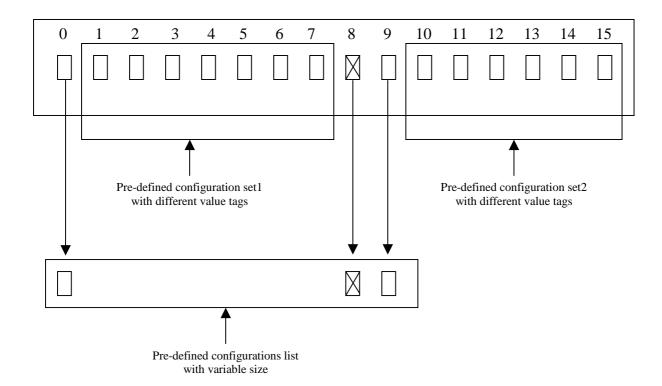


Figure C.2-2: Example scenario where non-stored pre-defined configurations need to be explicitly indicated

# Annex D (Normative): Implementation of Domain Specific Access Control (DSAC) in UEs of 3GPP Release 5

UEs of 3GPP Release 5 implementing the domain specific access class control feature but not implementing the network sharing feature shall act on the domain specific access class restriction indicated by the IE "Domain Specific Access Restriction Parameters For PLMN Of MIB" if present, and otherwise apply the access restrictions indicated by the IE "Cell Access Restriction".

# Annex E (informative): Change history

|         |                |                      |            |         | Change history   |       |                |
|---------|----------------|----------------------|------------|---------|--|-------|----------------|
| Date    | TSG #          | TSG Doc.             | CR         | Re<br>v | Subject/Comment  | Old   | New            |
| 10/1999 | RP-05          | RP-99524             | -          |         | Approved at TSG-RAN #5 and placed under Change Control   | -     | 3.0.0          |
| 12/1999 | RP-06<br>RP-06 | RP-99650<br>RP-99654 | 001<br>005 | 1       | Modification of RRC procedure specifications   | 3.0.0 | 3.1.0<br>3.1.0 |
|         | RP-06          |                      |            |         | Introduction of Information Element for Power Control Algorithm  |       |                |
|         |                | RP-99654             | 007        | 1       | RRC parameters for SSDT  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 009        | 1       | Inclusion of information elements for integrity protection   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 010        | 2       | Security mode control procedure  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 011        | 3       | Updates of the system information procedure  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 012        | 2       | Inter-frequency measurements and reporting   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 013        | 1       | Inter-system measurements and reporting  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 014        | 1       | Additional measurements in RRC measurement messages  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 015        | 3       | Value range for Measurement Information Elements   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 016        | 2       | Message contents for inter system handover to UTRAN  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99652             | 017        |         | Inclusion of ciphering information elements  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99651             | 018        |         | Corrections and editorial changes  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 019        | 1       | Algorithm for CTCF Calculation   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99651             | 025        |         | Logical CH for RRC Connection Re-establishment (RRC Connection Re-establishment deleted in RAN_10, RP-000715)                                  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99719             | 026        | 1       | Gain Factors   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 027        | 1       | Parameters for CELL UPDATE CONFIRM message   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99651             | 028        |         | Cell Update Cause  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 029        | 1       | RRC Initialisation Information   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 034        | 1       | Open loop power control for PRACH  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99652             | 038        |         | Addition of the UE controlled AMR mode adaptation  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99651             | 039        | 1       | Information elements for RLC reset   | 3.0.0 | 3.1.0          |
| F       | RP-06          | RP-99656             | 040        |         | Support for DS-41 Initial UE Identity  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 042        | 2       | Integration of Cell Broadcast Service (CBS)  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 044        | 1       | Gated transmission of DPCCH  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 045        |         | Modification to the Transport Format Combination Control message   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 046        |         | New Information elements and modifications to messages required in order to support configuration and re-configuration of the DSCH in FDD mode | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 047        | 1       | Editorial Corrections and Alignments with Layer 1 specifications   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 048        | 1       | Information elements for TDD shared channel operation  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 049        | 1       | Description of CN dependent IEs in Master Information Block  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99650             | 050        | 1       | UE capability information elements   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 051        | 1       | UTRAN response time to uplink feedback commands of TX diversity control  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 052        | 1       | New and corrected CPCH parameters  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 053        | 2       | Compressed mode parameters without gating  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 054        |         | Transport format combination set and transport format combination subset   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 055        | 1       | Information elements for cell selection and reselection  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 056        | 1       | Corrections and Alignments of the RRC to the L1 for TDD  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 057        | 1       | Introduction of a SCCH procedure   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 061        |         | Support for DS-41 Paging UE Identity   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 062        | 2       | Support for cdma2000 Hard Handover   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99656             | 063        | 1       | Provide necessary signalling to support FDD DSCH   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 064        | 1       | RRC procedure interactions   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 066        | 1       | Transfer of UE capabilities  | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99654             | 067        | +       | Selection of initial UE identity   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99657             | 069        | -       | UE capability verification in the security mode control procedure  | 3.0.0 | 3.1.0          |
|         |                |                      |            | 1       |  |       |                |
|         | RP-06          | RP-99657             | 070        | 1       | DPCH initial power   | 3.0.0 | 3.1.0          |
|         | RP-06          | RP-99657             | 071        |         | Actions when entering idle mode  | 3.0.0 | 3.1.0          |

|         | _     |           |     |         | Change history   |       |       |
|---------|-------|-----------|-----|---------|--|-------|-------|
| Date    | TSG # | TSG Doc.  | CR  | Re<br>v | Subject/Comment  | Old   | New   |
|         | RP-06 | RP-99657  | 072 |         | Specification of inter-frequency and inter-system reporting events for FDD                         | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 073 | 1       | Signalling radio bearers   | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99654  | 074 |         | CN information elements  | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99654  | 076 |         | UE information elements  | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 077 | 1       | Radio bearer, transport channel and physical channel information elements                          | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99654  | 078 |         | Other information elements   | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 079 | 2       | RRC signalling for PDCP  | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99654  | 080 |         | Content of Measurement Control Messages  | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99654  | 081 |         | RRC Information Elements to support Block STTD transmission diversity in TDD                       | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 082 | 1       | Signalling connection release  | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 083 | 1       | Addition of cell access restriction information elements to System Information                     | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99655  | 085 | 1       | RRC Connection Establishment parameters  | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 092 | 1       | Support of UE autonomous update of a active set on a non-used frequency                            | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 095 | 1       | TPC combining for power control  | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99653  | 096 | 1       | Editorial Modification of IEs in RRC messages  | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99655  | 097 |         | Selection of SCCPCH  | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99655  | 098 | 1       | RRC Initialisation Information   | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 100 | 1       | Support of physical channel establishment and failure criteria in the UE                           | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99655  | 102 | 1       | RRC Connection Re-establishment (Message deleted in RAN_10, RP-000715)                             | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 106 | 1       | System information on FACH   | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 108 | 1       | SAPs and Primitives for DS-41 mode   | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99655  | 109 | 1       | TX Diversity Mode for Dedicated Channel  | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 110 | 1       | RACH message length signalling on System Information   | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 113 | 1       | Routing of NAS messages in UTRAN   | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99655  | 116 | 3       | TBS Identification in TFS  | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 117 | 1       | Merging the hard handover and some radio bearer control procedures                                 | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99653  | 120 | 1       | Selected RRC message transfer syntax   | 3.0.0 | 3.1.0 |
|         | RP-06 | RP-99657  | 121 |         | Efficient rate command signalling  | 3.0.0 | 3.1.0 |
| 03/2000 | RP-07 | RP-000043 |     |         | TDD Mode BCH Reception in Cell DCH State   | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     |         | Uplink Outer Loop Power Control in TDD Mode  | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     | 1       | TFS TB Size Calculation with Bit Aligned TDD MAC Headers   | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     |         | Grouping of DRAC IEs, and detailed definitions of these IEs  | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     |         | Correction of specifications for the 'Dynamic Resource Allocation Control of Uplink DCH' Procedure | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     | 2       | Clarification of PDCP info and PDCP capability IEs   | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     |         | Editorial change to "Specification of system information block characteristics"                    | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     |         | Additions of CBS related Information Elements  | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     |         | Signalling for computed gain factors   | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     | 1       | General error handling procedures  | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     | 1       | RRC message extensions   | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     |         | Padding of RRC messages using RLC transparent mode   | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     | 2       | UE information elements  | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     | L       | Other information elements   | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     | 3       | Integrity protection function  | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     | 4       | RAB-RB relations   | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     | 1       | Inter-system handover from UTRAN   | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     | 3       | Handover to UTRAN including procedure for pre- configuration                                       | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     | 2       | RRC measurement filtering parameters   | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000043 |     |         | New event "RL out of UE Rx window"   | 3.1.0 | 3.2.0 |
|         | RP-07 | RP-000044 |     | 1       | Access control on RACH   | 3.1.0 | 3.2.0 |
| i       | RP-07 | RP-000044 | 149 | 2       | cdma2000 Hard Handover   | 3.1.0 | 3.2.0 |

|      | Change history |           |     |         |  |       |       |  |  |  |  |  |
|------|----------------|-----------|-----|---------|--|-------|-------|--|--|--|--|--|
| Date | TSG #          | TSG Doc.  | CR  | Re<br>v | Subject/Comment  | Old   | New   |  |  |  |  |  |
|      | RP-07          | RP-000044 | 150 | 1       | CPCH parameters with corrections   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 | 152 |         | U-plane AM RLC reconfiguration by cell update procedure  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 | 154 | 3       | СРСН   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 | 155 | 1       | Information elements for ASC in TDD  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 | 156 |         | Addition of timing advance value in handover related messages  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 | 157 | 2       | Physical channel description for TDD   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 | 159 |         | Message contents for the intersystem command message to UTRAN operating in TDD mode  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 | 160 |         | Corrections on use of PUSCH power control info and minor corrections   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 | _   | 2       | UE individual DRX cycles in CELL_PCH and URA_PCH states  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 |     |         | Correction to Transport Format Combination Control procedure   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 | 164 | 3       | Downlink outer loop power control  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 |     | 2       | Redirection of RRC connection setup  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 |     | 2       | Inter-frequency measurements in CELL_FACH state  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 |     |         | List of found editorial mistakes in the Dec99 version of 25.331 (V3.1.0)   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 |     | 1       | Transport block size   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 |     | 1       | Cell Access Restriction  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 |     |         | Editorial modification   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000044 |     |         | Modification of DPCH info  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     | 1       | Measurement control message  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     | 2       | Reporting cell status  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     |         | Additional IE for RB release   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 | 175 |         | Available SF in PRACH info   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 | 176 |         | Traffic volume measurement event   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 | 177 |         | Report of multiple cells on an event result  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 | 178 |         | Editorial modification on Direct Transfer  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     |         | Correction of the Security Mode Control procedure  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 | 180 | 1       | Maximum calculated Transport Format Combination  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 | 183 |         | Additional DPCH IEs to align 25.331 with 25.214  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 | 184 | 1       | RB – DCH mapping   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 | 188 | 1       | Modifications related to FDD mode DSCH   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     | 1       | Identification of Shared Channel Physical Configuration in TDD Mode  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     | 1       | Uplink Outer Loop Power Control During Hard Handover   |       | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     |         | Support of Multiple CCTrCH's in TDD Mode   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     | 1       | Uplink Physical Channel Control in TDD Mode  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     | 1       | Transfer of initial information from UE to target RNC prior to handover to UTRAN   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     | 1       | CN information elements  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     |         | UTRAN mobility information elements  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000045 |     | 1       | RB information elements  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     | 1       | Physical channel information elements  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     | 1       | UE capability information elements   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     |         | UE variables   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     | 1       | Actions when entering idle mode  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     |         | Usage of pilot bits  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     |         | System information procedure corrections   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     |         | Reconfiguration of ciphering   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     | 1       | Enhancements to RRC connection re-establishment procedure (Message subsequently deleted in RAN_!), RP-000715)              | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     |         | Updates to RRC Initialisation Information transparent container<br>and addition of reverse direction container description | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     | 1       | Changes in RRC messages to support lossless SRNC relocation  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     | 1       | Measurements of unlisted neighbouring cells  | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 |     | 2       | Inclusion of Location Services   | 3.1.0 | 3.2.0 |  |  |  |  |  |
|      | RP-07          | RP-000046 | 236 | 1       | Application of Access Service Classes and relation to Access Classes   | 3.1.0 | 3.2.0 |  |  |  |  |  |

|         | Change history |           |     |   |   |       |       |  |  |
|---------|----------------|-----------|-----|---|---|-------|-------|--|--|
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|         | RP-07          | RP-000046 |     | 1 | DRX indicator presence and state entering mechanism at the end of a procedure | 3.1.0 | 3.2.0 |  |  |
|         | RP-07          | RP-000046 | _   | 1 | Physical shared channel allocation procedure                                  | 3.1.0 | 3.2.0 |  |  |
|         | RP-07          | RP-000046 |     |   | Corrections to TDD specific parameters in PICH info                           | 3.1.0 | 3.2.0 |  |  |
|         | RP-07          | RP-000046 |     |   | Editorial modifications   | 3.1.0 | 3.2.0 |  |  |
|         | RP-07          | RP-000046 |     | 2 | Introduction of mapping function information in Cell selection and            | 3.1.0 | 3.2.0 |  |  |
|         | RP-07          | RP-000046 |     |   | Ciphering and integrity HFN   | 3.1.0 | 3.2.0 |  |  |
|         | RP-07          | RP-000046 |     |   | New SIB for UP  | 3.1.0 | 3.2.0 |  |  |
|         | RP-07          | RP-000047 |     |   | Removal of synchronization Case 3   | 3.1.0 | 3.2.0 |  |  |
|         | RP-07          | RP-000047 | 271 |   | TX Diversity  | 3.1.0 | 3.2.0 |  |  |
|         | RP-07          | RP-000047 | 272 |   | Update of tabular format clause 10  | 3.1.0 | 3.2.0 |  |  |
|         | RP-07          | RP-000047 | 273 |   | ASN.1 description   | 3.1.0 | 3.2.0 |  |  |
| 06/2000 | RP-08          | RP-000222 | 228 | 5 | Downlink power control in compressed mode                                     | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 260 | 1 | Clarification on physical channel allocations in TDD                          | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 261 | 4 | TDD Measurements and Reporting  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 262 | 4 | Signalling of IEs related to System Information on FACH                       | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 265 | 3 | Transport Format Combination Control  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 269 | 1 | Signalling of partial failure in radio bearer related procedures              | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 275 |   | Clarification on PDCP info  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 279 |   | Editorial modification on Transport Ch capability                             | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 280 |   | Editorial modification on CN IE   | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 281 | 3 | Editorial modification on Physical CH IE                                      | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 282 | 1 | Editorial modification on ASN.1 description                                   | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 283 | 1 | IEs on SIB5/6   | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 285 | 2 | Re-establishment timer  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 286 | 1 | CN DRX cycle coefficient  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 |     | 1 | Cell Access Restriction   | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 | 288 | 1 | Cell selection and re-selection parameters                                    | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 |     | 2 | Modification on Measurement IE  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 |     | 1 | RACH Transmission parameters  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 |     | 1 | SCCPCH System Info  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000222 |     | 1 | Addition of HFN for RRC CONNECTION RE-ESTABLISHMENT COMPLETE                  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 | 294 | 1 | RLC reconfiguration indicator   | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 | 296 | 3 | RLC Info  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 1 | Usage of Transport CH ID  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 2 | Transport format combination set  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 | 300 | 1 | Usage of U-RNTI and C-RNTI in DL DCCH message                                 | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     |   | Description of Cell Update Procedure  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 1 | System information modification procedure                                     | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     |   | Functional descriptions of the RRC messages                                   | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     |   | Clarification of CTFC calculation   | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 3 | Compressed mode parameters  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 2 | Signalling procedure for periodic local authentication                        | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 5 | Editorial corrections on security   | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 2 | Security capability   | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 1 | Corrections on ASN.1 definitions  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 2 | DRX cycle lower limit   | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 1 | Removal of CPICH SIR measurement quantity                                     | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 1 | Signalling connection release request   | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 1 | Change to IMEI coding from BCD to hexadecimal                                 | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 |     | 1 | Removal of RLC sequence numbers from RRC initialisation information           | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000223 | 320 | 3 | Addition of the length of PDCP sequence numbers into PDCP info                | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000224 |     | 1 | BSIC verification of GSM cells  | 3.2.0 | 3.3.0 |  |  |
|         | RP-08          | RP-000224 |     | Ė | Reporting cell status   | 3.2.0 | 3.3.0 |  |  |
|         |                | 1 555227  |     |   |   |       | 1     |  |  |

| _    | 1     |           | 1   | -       | Change history  | 1     | 1     |  |
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|      | RP-08 | RP-000224 | 326 | Ť       | Cell-reselection parameter signalling   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 | 328 | 3       | Multiplicity values   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 | 329 |         | Quality measurements  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 | 330 | 4       | CPCH Status Indication mode correction  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 | 331 | 4       | End of CPCH transmission  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 | 332 |         | Handover to UTRAN procedure   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 | 333 |         | Harmonization of access service classes in FDD and TDD                                  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 | 334 | 1       | Correction to usage of primary CCPCH info and primary CPICH info                        | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 | 335 |         | Corrections and clarifications on system information handling                           | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 | 336 |         | Editorial corrections   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 | 337 | 1       | Editorial corrections on uplink timing advance  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 |     |         | Correction of Transport Format Combination tabular format and ASN.1                     | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 |     | 1       | UE variables  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 |     | 1       | General error handling  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 |     | 1       | System Information extensibility in ASN.1 definitions                                   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 |     |         | Usage of pilot bits   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000224 |     | 3       | RRC connection release procedure  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 |     | 1       | Alignment of Section 10.3 on methodology defined in 25.921                              | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 |     |         | Modifications of cell (re)selection parameters  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 |     | 1       | GPS time-of-week represented as seconds and fractions of seconds                        | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 351 | 2       | CPCH corrections  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 352 |         | PLMN type selection   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 353 | 3       | Paging and establishment cause values   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 354 |         | Common channel configurations   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 355 | 2       | Clarification of prioritization of logical channels in UE                               | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 357 | 2       | UE capability corrections   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 358 | 2       | Clarification of HFN  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 359 | 3       | Clarification of Integrity Protection   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 360 | 1       | RRC message size optimization regarding TrCH parameters                                 | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 361 |         | Protocol extensions in ASN  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 362 | 1       | Downloading of pre- defined configurations via SIB 16                                   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 363 | 1       | Optimization of System Information  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 364 | 1       | CPCH gain factor  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 368 | 2       | SFN Transmission Rate in TDD Mode   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 371 | 1       | Integrity Control   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 372 |         | Modification to measurement event evaluation  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000225 | 373 |         | System Information related parameters   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 |     | 1       | Changes in RB mapping info  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 |     |         | Editorial corrections to PRACH system information and Cell info                         | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 | 378 |         | Editorial Corrections to 25.331 Procedures and Tabular Format                           | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 |     | 1       | Corrections to figures and procedures for the failure cases                             | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 | 380 | Ī       | Corrections on use of ORDERED_CONFIG  | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 | 382 | 1       | Corrections to Transport Channel and RB Reconfiguration procedures                      | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 |     | 1       | Corrections to INITIAL DIRECT TRANSFER and UE CAPABILITY INFORMATION CONFIRM procedures | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 |     |         | Corrections to Transparent mode signalling info Tabular format and ASN.1                | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 |     |         | Corrections to Soft Handover messages and procedures                                    | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 | 387 |         | Corrections to RRC CONNECTION REJECT procedures   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 |     | 1       | Transport format combination in TDD and Transport channel ID                            | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 | 389 | 1       | Signalling for dynamic TTI in TDD   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 | 390 | 1       | Usage of DCCH for Shared Channel Allocation message                                     | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 | 391 | 1       | Correction to physical channel IEs in TDD   | 3.2.0 | 3.3.0 |  |
|      | RP-08 | RP-000226 | 392 | 1       | TDD preconfiguration for Handover to UTRAN  | 3.2.0 | 3.3.0 |  |

|         |                |                        |     |              | Change history  |                |                |
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|         | RP-08          | RP-000226              | 393 |              | Corrections to measurement control descriptions and messages  | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000226              | 394 | 1            | Corrections on ASN.1 definitions  | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000226              | 395 |              | Addition of the Segmentation indication field for transparent mode RLC in the RLC Info              | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000226              | 396 | 1            | Radio Bearer identity for CCCH  | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000226              | 397 | 1            | ASN.1 definitions for RRC information between network nodes   | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              | 398 | 1            | NAS Routing   | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              | 399 |              | DPCCH power control preamble  | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              |     | 2            | Modifications of Assisted GPS Messages  | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              | 401 |              | Choice of Initial UE Identity   | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              | 402 |              | ANSI-41 information elements  | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              | 404 | 1            | RLC value ranges  | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              | 408 | 1            | HFN Reset   | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              | 409 | 1            | Clarification on ciphering parameters and integrity protection procedure in case of SRNS relocation | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              | 410 | 1            | Clarification of compressed mode activation and configuration failure                               | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              |     | 1            | Modification of the RLC Size IE   | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              |     |              | CPCH DL Power control   | 3.2.0          | 3.3.0          |
|         | RP-08          | RP-000227              |     | 1            | SFN measurements in TDD   | 3.2.0          | 3.3.0          |
| 09/2000 | RP-09          | RP-000361              |     | 3            | Clarification on multiplicity of PCH and PICH and S-CCPCH selection                                 | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     | 3            | Parameters to be stored in the USIM   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     | 3            | Optimization of Inter-system handover message   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     | 2            | Timing Advance in Handover Procedures   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     | 2            | Synchronization of Timing Advance and Timing Deviation<br>Measurement                               | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     |              | Downlink Physical Channels Per Timeslot   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     |              | TDD Mode DCH Reception in Cell DCH State  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     | 2            | Downlink Power Control During DTX in TDD Mode   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     | 1            | Paging Indicator Length Definition  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     |              | Updating & alignment of RRC containers & handover to UTRAN information transfer                     | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     |              | Default values for UE timers and counters   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     | 1            | Security mode control   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     | 1            | Corrections and Editorial updates to chapter 8  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     |              | Corrections and editorial updates to chapter 10   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     |              | Transition from CELL_DCH to CELL_PCH and URA_PCH state  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     |              | Assisted GPS Messaging and Procedures   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     | 2            | Corrections to Activation Time use  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     | <u> </u>     | Editorial Corrections to measurement reporting range  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000361              |     | 4            | Default DPCH offset value and DPCH offset   | 3.3.0          | 3.4.0          |
|         | RP-09<br>RP-09 | RP-000361<br>RP-000362 |     | 3            | RLC info Clarification of the description of IE semantics in "RB with PDCP                          | 3.3.0<br>3.3.0 | 3.4.0<br>3.4.0 |
|         | RP-09          | RP-000362              | 438 | 1            | information" Editorial corrections on security  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | ╫            | Editorial correction to RB mapping info   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | 1            | Compressed mode configuration failure   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | H            | Gain factors for TDD  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | +            | Introduction of Default DPCH Offset Value in TDD  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | 1            | Optimization of handover to UTRAN command   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | <del>l</del> | Editorial corrections   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | 1            | Mapping of channelisation code  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | 2            | DL TFCS Limitation  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | Ť            | SIB offset  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | T            | RRC CONNECTION RELEASE cause  | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | +            | Addition of RACH TFCS   | 3.3.0          | 3.4.0          |
|         | RP-09          | RP-000362              |     | 2            | Cell Identity   | 3.3.0          | 3.4.0          |
|         | 1              |                        |     |              |   | 1              | 3.4.0          |

|      | Change history |           |     |         |  |       |       |  |  |  |  |  |  |
|------|----------------|-----------|-----|---------|--|-------|-------|--|--|--|--|--|--|
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|      | RP-09          | RP-000362 | 455 | 1       | TDD PRACH Power Control for Spreading Factor 8/16  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000362 | 456 |         | TDD CCTrCH Repetition Length Definition  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000362 | 457 | 1       | Reporting threshold of traffic volume measurements   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000362 | 459 | 2       | UP GPS assistance data for SIB   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000362 | 461 | 1       | Support of cell update confirm on CCCH   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 462 | 1       | Max Window Size in RLC capabilities  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 463 | 3       | UE handling of CFN   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 464 | 1       | Correction of padding description in clause 12   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 465 | 1       | Window size in RLC info  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 466 | 1       | TFC Control Duration   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 467 |         | System Information Block Tabular Information   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 469 | 1       | Frequency encoding in inter-system handover messages   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 470 |         | RRC message size optimization regarding TFS parameters   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 471 | 2       | RACH selection   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 472 |         | DRX cycle lower limit  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 474 |         | Rx window size in RLC info   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 476 | 1       | Corrections & optimizations regarding system information blocks of length 215221   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 477 | 1       | Corrections on 8.1.1 resulting from RRC review at R2#14  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 478 | 1       | Corrections to the RRC connection release procedure  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 479 | 1       | New release cause for signalling connection re-establishment   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 480 | 1       | Correction to IE midamble shift and burst type   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 481 | 1       | Correction in RLC info   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 483 |         | Description of CTCH occasions  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 485 | 1       | TDD CCTrCH UL/DL Pairing for Inner Loop Power Control  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000363 | 486 | 1       | DCCH and BCCH Signalling of TDD UL OL PC Information   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 487 | 1       | Broadcast SIBs for TDD UL OL PC Information  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 490 | 1       | CPCH corrections   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 492 | 3       | Corrections to Security IEs  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 494 | 1       | Corrections to parameters to be stored in the USIM   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 496 |         | Editorial corrections  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 497 | 2       | Physical Shared Channel Allocation procedure   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 498 |         | Correction to Transport Format Combination Control Message   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 499 | 1       | Usage of Cell Parameter ID   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 500 |         | RB description for SHCCH   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 501 | 1       | Use of LI in UM  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 502 | 1       | Minor Corrections to RRC Protocol Specification  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 503 | 1       | Correction to Cell Update Cause  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 | 504 |         | Correction on T307 definition  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 |     |         | Corrections to relative priorities in RRC Protocol   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 |     |         | Unification of Reconfiguration Procedures  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 |     | 1       | Changes to section 8.2 proposed at Paris RRC Ad Hoc  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 |     |         | Establishment Cause  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 |     | 1       | PRACH partitioning   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 |     |         | Editorial Correction on Active Set Update  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000364 |     |         | Editorial Correction regarding system information  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000365 |     | 1       | Clarification on Reporting Cell Status   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000365 | 513 | 1       | Editorial corrections on RRC Connection Establishment and Release procedures NOTE: In subclause 8.1.4.6, the change from "decrease" to "increase" for V308 was decided to be incorrect after discussion on the TSG-RAN WG2 reflector and was not implemented | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000365 | 514 |         | Gated Transmission Control Info  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000365 | 515 | 1       | Cell selection/reselection parameters for SIB 3/4  | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000365 |     |         | Implementation of Ec/N0 parameters and optimization of SIB 11/12   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000365 | 517 |         | PRACH Info   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |
|      | RP-09          | RP-000365 | 518 | 1       | Uplink DPCH power control info   | 3.3.0 | 3.4.0 |  |  |  |  |  |  |

| Change history |                |                        |     |          |  |       |                |  |  |  |
|----------------|----------------|------------------------|-----|----------|--|-------|----------------|--|--|--|
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|                | RP-09          | RP-000365              | 519 |          | AICH power offset value range  | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              |     |          | Direct paging of RRC connected UE in CELL_PCH/URA_PCH NOTE: This CR was postponed in TSG-RAN #9 and was wrongly included in v3.4.0. This was corrected in v3.4.1 | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              |     |          | Corrections to Sections 1-7  | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              | 522 |          | Error handling for Uplink Physical Channel Control procedure   | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              |     |          | Corrections to downlink outer loop power control in compressed mode  | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              | 524 | 1        | Clarification on measurement procedure using compressed mode   | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              |     | 1        | Updates to cell and URA update procedures based on RRC Ad Hoc  | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              |     | 1        | Updates to RNTI allocation procedure based on RRC Ad Hoc   | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              |     |          | PRACH constant value   | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              |     | 1        | Corrections to the paging procedure  | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              |     | 1        | Moving of text from 25.304   | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              |     | 1        | Message extensibility  | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              | 534 | 1        | Additions to "State of RRC Procedure" in RRC Initialisation information, source RNC to target RNC  | 3.3.0 | 3.4.0          |  |  |  |
|                | RP-09          | RP-000365              | 535 | 1        | Support of codec negotiation   | 3.3.0 | 3.4.0          |  |  |  |
|                | -              | -                      | _   |          | Removal of contents of CR 520 from v3.4.0, because it was postponed at TSG-RAN #9 and by accident included anyway.   | 3.4.0 | 3.4.1          |  |  |  |
| 12/2000        | RP-10          | RP-000570              |     |          | Downlink outer-loop power control in compressed mode   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     | 1        | Correction in the use of "U-RNTI Short"  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     |          | Corrections related to UE Timing   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     |          | Corrections to SFN-SFN definition  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              | _   | 1        | Corrections to definition and use of Activation Time   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              | 542 |          | Corrections to logical channel priorities  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              | 543 | 1        | Correction to codec negotiation  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     | 1        | CFN-SFN observed time difference measurement   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     | 1        | Correction to timing indication for hard handover  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              | 546 | 1        | UE Radio Access Capability Corrections   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              | 548 | 1        | RRC establishment and paging causes for NAS signalling   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     |          | Corrections to Intra-frequency measurements and Traffic volume measurements  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     | 1        | PRACH/RACH System information  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     | 1        | GSM Measurement reporting  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     | 1        | BLER measurement and quality target  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     | 1        | Clarification of PDCP sequence number window terminology   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     | 1        | Clarification on Error Handling  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     |          | Removal of compressed mode measurement purpose "other"   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     |          | Clarification of compressed mode measurement purpose "GSM"   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000570              |     | 2        | Reporting multiple GSM cells   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000571              |     | 1        | Number of RLs that can be removed in Active Set update   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000571              |     | 1        | Clarification on Segment Index   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10<br>RP-10 | RP-000571<br>RP-000571 |     | 3        | RRC procedure performance requirements  Correction of newInterSystemCellList and   | 3.4.1 | 3.5.0<br>3.5.0 |  |  |  |
|                | RP-10          | RP-000571              |     | 4        | MeasurementControlSysInfo in ASN.1 Removal of Flow Id concept while maintaining lu interface   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000571              | 574 | 2        | flexibility Ciphering and reset  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000571              |     | 1        | Corrections and clarifications concerning inter-RAT change procedures  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000571              |     | 1        | General Security Clarifications  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000571              |     |          | Clarification on RB 0  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000571              |     |          | Clarification on the transition of RRC state   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000571              |     | 1        | UP measurements for RRC information to target RNC  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000571              |     | <u> </u> | Correction on LCS reporting criteria   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000574              |     | 1        | CSICH Corrections  | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000571              |     | 1        | Clarification to handling of satellite health issues   | 3.4.1 | 3.5.0          |  |  |  |
|                | RP-10          | RP-000571              | 585 |          | Clarification on activation time   | 3.4.1 | 3.5.0          |  |  |  |

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|---------|----------|------------|-----|---------|--|-------|-------|
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|         | RP-10    | RP-000571  | 586 |         | Clarification on activation time for ciphering in TM                 | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000571  | 587 | 2       | Measurement procedures and messages                                  | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000571  | 590 | 1       | Inter-RAT UE radio access capability                                 | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000571  | 592 | 1       | Clarification on cell update/URA update procedures                   | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000571  | 595 | 4       | Protocol States and Process  | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000571  | 596 | 1       | System Information   | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000715  | 597 | 5       | RRC Connection Management Procedures, Generic procedures and actions | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  |     | 1       | Paging Procedures  | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  |     |         | NAS signalling Procedures  | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  |     | 3       | Radio Bearer Control Procedures                                      | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  |     | 1       | Corrections to the Counter Check Procedure                           | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  |     |         | Tabular Information and ASN.1  | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  |     | 2       | Corrections to Measurement Occasion concept                          | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  |     |         | Corrections concerning optimisation of RB information                | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  |     | 1       | Corrections to security  | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  |     | 1       | Ciphering activation time for DPCH                                   | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  |     |         | Confirmation of signalling connection establishment                  | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  | 611 | 2       | RACH Sub-channel signalling  | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  | 613 | 2       | Assistance data delivery for UP                                      | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  | 614 | 1       | Clarification of LCS measurements                                    | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  | 615 | 2       | Configuration of RLC PDU sizes for logical channels                  | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000574  | 616 |         | PICH power offset for TDD  | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  | 617 |         | Correction for PDSCH power control for TDD                           | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000574  | 618 |         | Usage of dynamic spreading factor in uplink                          | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  | 619 |         | Correction of Midamble Shift for Burst Type 3                        | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  | 621 |         | Correction of text concerning Scheduling of System Information       | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  | 622 | 1       | Alignment of GSM'99 BA Range concept and its inclusion in UTRA       | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  | 623 | 1       | Clarification of RB mapping info                                     | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000572  | 624 | 1       | Correction to UE multi-RAT capability                                | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000573  | 625 |         | Correction to PDCP sequence number exchange during hard handover     | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000573  | 628 | 2       | DCH Quality Target   | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000573  | 629 | 1       | Simultaneous release of RBs and signalling connection                | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000573  | 630 |         | Correction on Transport Channel Reconfiguration                      | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000573  | 631 |         | Limitation of DRX cycle length                                       | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000574  | 632 |         | Signalling of the alpha value in TDD for open loop power control     | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000573  | 633 |         | Support for improved compressed mode handling for TDD measurements   | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000573  | 636 |         | Usage of secondary CPICH and secondary scrambling code               | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000573  | 639 |         | Expiration time of SIB type 7, 14                                    | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000573  | 640 | 1       | Correction to integrity protection                                   | 3.4.1 | 3.5.0 |
|         | RP-10    | RP-000684  | 641 |         | Downlink Outer Loop Control  | 3.4.1 | 3.5.0 |
| 03/2001 | RP-11    | RP-010029  | 642 | 2       | RL Failure in cell update procedure                                  | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  | 645 | 1       | Clarification on COUNTER CHECK                                       | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  | 646 | 2       | Traffic Volume Measurement corrections                               | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  |     | 2       | Reserved TFCI for the TDD Special Burst                              | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  |     | 1       | Correction to description of RRC state transitions                   | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  |     | 1       | RLC re-establish correction  | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  |     | 1       | Removal of RLC logical channel mapping indicator                     | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  |     | 1       | New paging and establishment cause "Unknown"                         | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  |     | 1       | Miscellaneous procedure corrections                                  | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  |     | 1       | Corrections to compressed mode pattern sequence handling             | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  |     | 1       | Inter-system change clarifications                                   | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  |     | 1       | RLC status transmission in CELL_PCH and URA_PCH                      | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  |     | 1       | Clarification of RB information parameter values for SRB0            | 3.5.0 | 3.6.0 |
|         | RP-11    | RP-010029  |     | H       | Encoding for RRC- container  | 3.5.0 | 3.6.0 |
| 1       | 131 - 11 | 111 010028 | 550 | 1       | Zinosanig for title somalifor  | 0.0.0 | 0.0.0 |

|      | _       |           | -   |              | Change history   |       |       |
|------|---------|-----------|-----|--------------|--|-------|-------|
| Date | TSG #   | TSG Doc.  | CR  | Re           | Subject/Comment  | Old   | New   |
|      | RP-11   | RP-010029 | 667 | 2            | Update of message extension and encoding descriptions  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010032 | 668 | 4            | Introduction of default pre-defined configurations   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010029 | 669 | 2            | Security corrections   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010029 |     | 1            | Clarifications on Blind Handover Support   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010029 | 671 | 1            | Missing descriptions of UE actions   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010029 |     | 2            | Corrections on UE Positioning information  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010029 |     | 1            | Security related corrections to SRNS   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010032 |     | 2            | Downlink power offsets   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010274 |     | 2            | Checking the integrity of UE security capabilities   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 | 678 | 1            | Clarification to Secondary CCPCH info  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | 1            | Miscellaneous corrections  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | 1            | Removal of Layer 3 filtering for RACH  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | 2            | Correction of compressed mode parameters   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | +            | Removal of immediate cell evaluation   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | 2            | Scheduling of SIB 15.2 and SIB 15.3  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | 1            | Correction to ECN modules  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | 1            | Improvement of the description of timing advance for TDD   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | H            | Correction on timing advance and allocation for shared channels  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | 1            | Clarification on SF 1 signalling   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | 1            | Correction to power control in TDD   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | <del>l</del> | Midamble - Channelisation code association for TDD   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 |     | 1            | Network requested reporting for physical shared channel  | 3.5.0 | 3.6.0 |
|      | IXI -11 | 10030     | 031 |              | allocation   | 3.3.0 | 3.0.0 |
|      | RP-11   | RP-010030 | 693 |              | System Information   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 | 694 | 1            | Clarification on Transport Channel Identity  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 | 696 | 1            | Editorial Correction   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 | 698 | 2            | Correction to add coding of intra domain NAS node selector   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 | 700 | 1            | Corrections to system information block characteristics in TDD   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 | 701 | 2            | ASN.1 corrections  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010030 | 702 | 2            | Measurement related corrections  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 703 | 1            | Clarifications on TFC Control procedure  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 704 | 2            | Association of PLMN ID to neighbour cells  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 705 | 1            | TFCS Selection Guidelines  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 710 |              | Special Burst Scheduling During DTX in TDD   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 711 | 1            | Radio Link Failure Criteria in TDD   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 712 | 1            | Correction & Clarification to TDD RACH Subchannels   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 713 | 1            | Number of retransmission of RRC CONNECTION REQUEST   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 714 | Ì            | Uplink Frequency Notification  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 |     |              | Clarification of Radio Bearer Mapping for DCH/DSCH Transport Channels  | 3.5.0 | 3.6.0 |
| 1    | RP-11   | RP-010031 |     |              | Correction of mismatches between tabular and ASN.1   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 717 |              | Correction to discontinuous reception in TDD   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 718 |              | Power control preamble   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 719 |              | Maximum number of AM entity  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 720 | 1            | Real-time Integrity Broadcast  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 721 | 3            | Moving Real-time Integrity description to different chapter  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 723 | 1            | Removal of the payload unit concept  | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 724 | Ī            | Security related corrections to SRNS   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010031 | 725 | Ī            | Periodic PLMN selection correction   | 3.5.0 | 3.6.0 |
|      | RP-11   | RP-010042 | 683 | 1            | Modification of "SSDT Information" IE parameters to indicate if SSDT is used in the UL only                  | 3.6.0 | 4.0.0 |
|      | RP-11   | RP-010041 | 692 | 1            | Idle allocation for Node B synchronisation   | 3.6.0 | 4.0.0 |
|      | RP-11   | RP-010037 |     | 1            | Physical channel configuration information elements for 1.28 Mcps TDD  | 3.6.0 | 4.0.0 |
|      | RP-11   | RP-010037 |     | 2            | Changes to Measurement Related Signalling and Introduction of Cell (Re)selection Parameters for 1.28Mcps TDD | 3.6.0 | 4.0.0 |
|      | RP-11   | RP-010037 |     | 1            | Introduction of RACH Parameters for 1.28 Mcps TDD  | 3.6.0 | 4.0.0 |
|      | RP-11   | RP-010037 | 709 |              | Introduction of UE radio access capability Parameters for 1.28   | 3.6.0 | 4.0.0 |

| _       |       |           |     | -       | Change history  |       | 1     |
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|         |       |           |     | Ť       | Mcps TDD  |       |       |
|         | RP-11 | RP-010040 | 722 | 1       | Introduction of IPDLs for TDD   | 3.6.0 | 4.0.0 |
|         | RP-11 | RP-010039 | 726 | 1       | ROHC updates to RRC   | 3.6.0 | 4.0.0 |
| 06/2001 | RP-12 | RP-010311 | 731 |         | Clarification of the IE 'spreading factor' in Uplink DPCH info for      | 4.0.0 | 4.1.0 |
|         |       |           |     |         | FDD mode  |       |       |
|         | RP-12 | RP-010311 | 733 |         | Correction of UE Radio Access Capability depending on UTRAN FDD bands   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010311 | 735 |         | Clarification on Security mode control                                  | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010311 |     |         | Correction of TrCH parameter handling                                   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010311 |     |         | TFC Subsets in TDD  | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010311 |     |         | RRC containers  | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010311 |     |         | Various corrections   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010311 |     |         | General error handling for system information                           | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010311 |     |         | Order of elements in strings  | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010311 | _   |         | Configuration consistency checks  | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010312 |     |         | Compressed mode corrections   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010312 |     | 1       | Correction concerning inter-RAT procedures                              | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010312 |     | I       | Measurement corrections   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010312 |     | I       | RLC Tr Discard  | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010312 |     |         | Annex B CPCH Correction   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010312 |     |         | SIB Correction for CSICH Power Offset                                   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010312 |     |         | Transfer of Last known position in case of SRNS relocation              | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010312 |     |         | Corrections to UE Positioning measurements                              | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010312 |     |         | GSM measurements in compressed mode                                     | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010312 |     |         | Correction of Activation Time in Inter-Rat HO Commands                  | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010313 |     |         | Clarification of FRESH in SRNS relocation                               | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010313 |     |         | Correction to UE timers and constants in idle mode                      | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010313 |     |         | Clarification on multiframe allocation in TDD                           | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010313 |     |         | Predefined parameters for logical channels                              | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010313 |     |         | Pathloss calculation  | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010313 |     |         | Clarification on periodic measurement reporting                         | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010313 | 803 | 1       | Handling of IE PRACH TFCS and Primary CPICH/Primary CCPCH               | 4.0.0 | 4.1.0 |
|         |       |           |     |         | info  |       |       |
|         | RP-12 | RP-010313 |     |         | Correction to FACH measurement occasion in TDD                          | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010313 |     |         | Clarification of L1 synchronization procedures                          | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010313 |     |         | Correction of Activation Time definition                                | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010314 |     |         | Corrections to RRC procedure performance                                | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010314 |     |         | Removal of mapping function   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010314 |     |         | Security clarifications   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010314 |     |         | Corrections to UE Positioning   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010314 |     |         | Definition of DPCH numbering  | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010314 |     |         | Corrections to System Information Procedure                             | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010314 |     | _       | Relation between DOFF and DPCH Frame Offset                             | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010314 |     | 1       | Procedures for "same as UL"   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010314 |     |         | Editorial and minor corrections   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010314 |     |         | Editorial Correction  | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010315 | 843 |         | Corrections on OTDOA-IPDL specific burst parameter semantic description | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010315 | 845 | T       | Error handling for messages sent from another RAT                       | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010315 |     | T       | Needed TFC in the TFCS for TDD  | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010315 |     | I       | Clarification of TFCS selection guidelines                              | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010315 |     | T       | Clarification of Traffic Volume measurements                            | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010315 |     | 1       | CFN synchronisation problems at timing re-initialised hard              | 4.0.0 | 4.1.0 |
|         |       |           |     |         | handover  |       |       |
|         | RP-12 | RP-010315 |     |         | Corrections on UP Assistance Message Descriptions                       | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010315 |     |         | Correction on Area Scope of SIB 15.3                                    | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010315 |     |         | Correction to AICH power offset   | 4.0.0 | 4.1.0 |
|         | RP-12 | RP-010316 | 875 |         | Clarification on IE 'Downlink rate matching restriction information'    | 4.0.0 | 4.1.0 |

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|        | RP-12 | RP-010316  | 877  |          | Corrections on Tabular/ASN.1  | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010316  | 879  |          | Corrections on Tabular and ASN.1 inconsistencies  | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010316  | 881  |          | Editorial corrections on Tabular and ASN.1 inconsistencies                                    | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010316  | 883  | l        | UE Positioning corrections to ASN.1 and tabular   | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010316  | 885  |          | Corrections to resolve inconsistencies between Tabular and ASN.1                              | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010316  | 887  |          | UE positioning OTDOA Neighbour Cell Info  | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010316  | 889  |          | DRAC corrections  | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010316  | 893  | 1        | ASN.1 Correction of IE TFCS ID  | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010316  | 895  | 1        | Correction of IE IODE range in AGPS Positioning   | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010317  | 897  |          | Correction to BurstModeParameters in IPDL   | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010317  | 899  | 1        | Corrections on inconsistencies between Tabular and ASN.1                                      | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010317  | 901  | 1        | Naming of message abstract types in ASN.1   | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010317  | 904  | 1        | Information elements outside the extension container  | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010317  | 906  |          | Correction concerning DRX cycle upon inter-RAT change towards UTRAN                           | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010323  | 773  | 1        | Corrections to IPDLs for TDD  | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010323  |      | 2        | Correction to 1.28Mcps TDD RACH parameters and operation                                      | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010323  |      | 1        | TFCI coding in case of 8PSK   | 4.0.0 | 4.1.0 |
|        | RP-12 | RP-010323  |      | 1        | Structure and naming of information elements  | 4.0.0 | 4.1.0 |
| 9/2001 | RP-13 | RP-010544  |      | ╁        | UL Transport Channel Type Correction  | 4.1.0 | 4.2.0 |
| 0/2001 | RP-13 | RP-010544  |      | 1        | Guidelines concerning conditions, spares, defaults and correction                             | 4.1.0 | 4.2.0 |
|        | 1 10  | 111 010011 | 0000 |          | of inconsistencies  |       | 1.2.0 |
|        | RP-13 | RP-010544  | 0910 |          | Correction to TDD DL DPCH Common Timeslot Info  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010544  | 0912 |          | TDD System Information Update in Cell_DCH   | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010544  | 0914 |          | Editorial Corrections   | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010544  | 0916 |          | UL DPCH Power Control Info in TDD   | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010544  | 0918 | l        | CN-originated paging in CELL_PCH and URA_PCH state  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010544  | 0920 |          | Corrections to UE variable handling   | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010544  | 0922 |          | Inter-frequency measurements  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010544  | 0924 | l        | Inter-RAT measurements  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010671  | 0926 | 1        | Intra-frequency measurements  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010545  | 0928 |          | Multiplexing configuration corrections  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010545  | 0930 |          | Reception of non-dedicated control channels mapped on FACH in CELL_FACH state                 | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010545  | 0932 |          | Removal of C-RNTI when entering CELL_DCH  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010545  |      | 1        | TF and TFC set definition   | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010545  | 0937 | 1        | Correction of remaining ASN.1/Tabular inconsistencies   | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010545  | 0939 | 1        | CPICH Ec/N0 Range   | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010545  |      | 1        | Priorities for IDNNS coding   | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010545  |      |          | Dedicated pilots and S-CPICH specification related to UE specific beamforming                 | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010545  | 0945 | 1        | Security corrections  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010546  |      | T        | Intra-frequency measurement events for TDD corrections  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010546  |      | 1        | Inconsistencies between ASN.1 and tabular format  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010546  |      | 1        | TDD PICH corrections and clarifications   | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010546  |      | 1        | Messages on CCCH  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010546  |      | 1        | Clarification of Parameter Values for Default Radio Configurations                            | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010546  |      | T        | Clarification to usage of default values in "Cell Selection and Reselection for SIB11/12Info" | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010546  | 0965 | 1        | Clarification of handling of System information block 14                                      | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010546  |      | T        | Description of UE behaviour when receiving UE positioning related information                 |       | 4.2.0 |
|        | RP-13 | RP-010546  | 0982 | +        | Clarification on periodic measurement reporting   | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010546  |      | T        | Corrections and clarifications on Measurement procedures description                          | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010547  | 0986 | +        | Lossless Criteria in PDCP Info  | 4.1.0 | 4.2.0 |
|        | RP-13 | RP-010547  |      | $\vdash$ | Corrections to cell reselection parameter values  | 4.1.0 | 4.2.0 |
|        |       |            |      |          |   |       |       |

|         |       |           |      |         | Change history   |       |       |
|---------|-------|-----------|------|---------|--|-------|-------|
| Date    | TSG # | TSG Doc.  | CR   | Re<br>v | Subject/Comment  | Old   | New   |
|         | RP-13 | RP-010547 | 0992 |         | Corrections to cell update procedures  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010547 | 0994 | Î       | PDCP configuration and PS domain configuration checks  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010547 | 0996 |         | Correction to handling of RRC transaction identifier for Cell<br>Update, URA Update and RRC connection setup | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010547 |      | 1       | Correction of UE capabilities regarding Rx-Tx time difference type 2 measurement                             | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010547 |      |         | Correction to handling of IE 'Downlink info for each radio link'   | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010547 | 1004 |         | Redundant IE in Traffic volume measurement system information  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010547 |      |         | Editorial corrections  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010548 |      |         | MAC logical channel priority added to definition of RB0 and SHCCH  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010548 |      |         | Control of primary CCPCH RSCP measurement in PUSCH CAPACITY REQUEST message                                  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010548 |      |         | Various minor corrections  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010548 |      |         | Range of T312  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010548 |      |         | Bitstring of channelisationCodeIndices   | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010548 |      |         | Transmission of UE CAPABILITY INFORMATION message  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010548 |      |         | Multiple UE capabilities procedures  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010548 |      |         | Corrections to information elements outside the extension container  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010548 |      |         | SFN reporting  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010548 |      |         | TFCI combining indicator   | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010549 |      |         | RLC reset on a Signalling Radio Bearer   | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010549 |      |         | Quality Indication for UE Positioning Parameters   | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010549 |      |         | Editorial Correction for UE Positioning  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010549 |      |         | Clarification on the current status of ciphering   | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010549 |      |         | Clarification on HFN initialization at SRB and RB setup  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010549 |      |         | Clarification on Inter-RAT measurement   | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010549 |      |         | Clarification on re-assembly of segments   | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010549 |      |         | Minor Corrections  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010549 |      |         | Support of dedicated pilots for channel estimation   | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010549 | 1068 |         | Correction to SRNS relocation handling   | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010550 |      |         | Correction to RLC state variables  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010550 |      |         | Reading of CN information in SIB 1 inRRC Connected Mode  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010550 |      |         | Restricting the maximum amount of preconfigurations in case of equivalent PLMNs                              | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010554 |      |         | Order of bits in bitstrings  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010554 |      |         | Selection of the RFC3095 CID transmission  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010554 |      |         | Correction of IPDL parameters for TDD enhancements in ASN.1 description                                      | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010554 |      | 1       | 1.28 Mcps TDD PICH, Midamble and UL timing advance control corrections                                       | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010554 |      |         | Introduction of 1.28 Mcps TDD Mode in clause 13.7  | 4.1.0 | 4.2.0 |
|         | RP-13 | RP-010554 |      |         | Tadv in 1.28 Mcps TDD  | 4.1.0 | 4.2.0 |
| 10/     | RP-13 | RP-010554 | 0974 |         | Correction and clarification to PRACH in 1.28 Mcps TDD   | 4.1.0 | 4.2.0 |
| 10/2001 | -     | -         | -    |         | Replacement of incorrect (R'99) version of ASN.1 by correct (Rel-4) version of ASN.1.                        | 4.2.0 | 4.2.1 |
| 12/2001 | RP-14 | RP-010763 |      |         | Corrections to RRC information containers  | 4.2.1 | 4.3.0 |
|         | RP-14 | RP-010763 |      |         | Removal of Block SSTD  | 4.2.1 | 4.3.0 |
|         | RP-14 | RP-010763 |      |         | COUNT-C-SFN frame difference measurement   | 4.2.1 | 4.3.0 |
|         | RP-14 | RP-010763 |      |         | Trigger for deletion of ciphering and integrity keys   | 4.2.1 | 4.3.0 |
|         | RP-14 | RP-010763 |      |         | Correction to P_compensation calculation for GSM neighbour cells   |       | 4.3.0 |
|         | RP-14 | RP-010763 |      |         | Preconfigurations in case of equivalent PLMNs  | 4.2.1 | 4.3.0 |
|         | RP-14 | RP-010763 |      |         | Handling of DRX cycle and U-RNTI in RRC connection setup and handling of TrCH information                    | 4.2.1 | 4.3.0 |
|         | RP-14 | RP-010763 |      |         | Correction to Information Element names  | 4.2.1 | 4.3.0 |
|         | RP-14 | RP-010763 |      |         | Correction of Description of IE "SSDT Information"   | 4.2.1 | 4.3.0 |
|         | RP-14 | RP-010763 |      |         | Clarification on Cell Identity and correction to reference to BAND_INDICATOR                                 | 4.2.1 | 4.3.0 |
|         | RP-14 | RP-010764 | 1117 |         | Clarification to Measured Results on RACH and Measurement<br>Events  | 4.2.1 | 4.3.0 |

|         | Change history |           |      |         |   |       |       |  |  |  |  |  |
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|         | RP-14          | RP-010764 | 1119 |         | Inconsistency between ASN.1 and tabular wrt. RPLMN information                              | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010764 | 1124 |         | General clarification on Establishment of Access Service Classes                            | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010764 | 1126 |         | Clarification on TX diversity indicator IE and STTD indicator IE                            | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010764 | 1132 |         | Different diversity modes used in the same active set                                       | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010764 | 1134 |         | Issues regarding signalling connection establishment and RRC connection release             | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010764 | 1136 |         | Presence of AC to ASC mapping in SIB5 and SIB6  | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010764 | 1138 |         | RRC establishment cause at inter-RAT cell change order to UTRAN                             | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010764 | 1142 |         | Start of timers at radio link failure   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010765 | 1144 |         | Handling of the number of FBI bits sent in Uplink DPCH info                                 | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010765 | 1146 |         | Bit string order when using PER   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010765 | 1148 |         | Clarification on DRX cycle length in connected mode   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010765 | 1152 |         | Correction to error condition on downlink information for each radio link                   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010765 | 1154 |         | Correction of inconsistencies between tabular and ASN.1                                     | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010765 | 1156 |         | Measurement related corrections   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010765 | 1158 |         | Inconsistency between hard-coded preconfigurations parameters and procedure text            | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010765 | 1166 |         | PLMN search in CELL_PCH/URA_PCH states with 80ms DRX cycle                                  | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010765 | 1168 |         | Correction to CFN calculation for FDD   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010765 | 1170 |         | Correction to radio bearer control  | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010766 | 1172 |         | Handling of IE "frequency info"   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010766 | 1174 |         | Correction to Radio Bearer Release  | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010940 | 1178 | 1       | Correction to RACH reporting  | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010766 | 1180 |         | Correction to URA/Cell update and other minor corrections                                   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010766 |      |         | Correction to Active Set Update   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010766 |      |         | Correction of Traffic Volume Measurement Criteria   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010941 |      | 1       | Correction of UE Positioning  | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010766 |      |         | Invalid RRC CONNECTION REJECT   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010766 |      |         | Security baseline for corrections   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010766 |      |         | Pending integrity protection activation time for UL RB0                                     | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010767 |      |         | Correction of rate matching restriction function  | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010773 |      |         | Usage of UM RLC Special Length Indicator  | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010773 |      |         | Corrections to REL-4 LCR Tabular Description and ASN1 Code                                  | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010773 |      |         | Correction of FPACH parameter definition for 1.28Mcps TDD                                   | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010773 |      | -       | Correction of 1.28Mcps TDD  | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010773 |      |         | Correction and Clarification to Open Loop Power Control in 1.28 Mcps TDD                    | 4.2.1 | 4.3.0 |  |  |  |  |  |
|         | RP-14          | RP-010773 | 1206 |         | Extensions of IE value ranges in tabular  | 4.2.1 | 4.3.0 |  |  |  |  |  |
| 03/2002 | RP-15          | RP-020070 |      |         | Constant value range correction for DPCH and PUSCH in TDD mode                              | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020070 | 1231 |         | Corrections to open loop power control for TDD and RB information parameters for SHCCH      | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020070 | 1233 |         | Removal of unnecessary replication of TFCS ID in Physical Shared Channel Allocation message | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020070 | 1237 |         | Correction to TF selection when using UL RLC TM   | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020070 | 1239 |         | Correction to the UE behaviour in case of SRNS relocation                                   | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020070 | 1241 |         | Header Compression protocols re-initialisation during SRNS Relocation                       | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020070 | 1243 |         | Misalignments between tabular and ASN.1 related to UE Positioning, tabular correction       | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020070 | 1245 |         | Corrections to comments in ASN.1  | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020070 |      |         | Correction to restarting of T308  | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020070 |      |         | Clarification of the use of T309 during inter-RAT cell reselections                         | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020071 |      |         | Measurement Corrections   | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020239 |      | 1       | Existence of TFCI bits  | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020071 |      |         | Corrections of inconsistency between procedural description, tabular and ASN.1              | 4.3.0 | 4.4.0 |  |  |  |  |  |
|         | RP-15          | RP-020071 | 1260 |         | Corrections to Expiration Time Factor and Expiration Time formula                           | 4.3.0 | 4.4.0 |  |  |  |  |  |

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|         | RP-15 | RP-020071 | 1262 |         | Corrections to Reporting Cell Status  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020071 | 1268 |         | Correction to inter frequency measurements  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020071 | 1271 |         | Actions at reception of system information block type 1                               | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020071 | 1273 |         | Tx diversity and no diversity in the same active set                                  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020071 | 1275 |         | Correction to cell update   | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020071 | 1277 |         | Successful and unsuccessful procedures  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020072 | 1279 | 1       | Measurement related corrections   | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020072 | 1281 | 1       | Clarifications on Event 1D  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020205 | 1283 | 1       | Security corrections  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020072 | 1285 | 1       | Transition from CELL_DCH to CELL_FACH state   | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020072 | 1287 | 1       | Corrections and clarifications of Radio link timing                                   | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020072 |      |         | Spare values in ASN.1   | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020072 | 1294 | 1       | Actions on reception of measurement related IEs                                       | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020231 | 1296 | 1       | Removal of channel coding option "no coding" for FDD and 3.84 Mcps TDD                | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020072 | 1298 | 1       | Timing Indication when moving to CELL_DCH state                                       | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020072 | 1307 |         | Correction to processing RB mapping info  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020072 |      |         | RRC Connection Release following network authentication failure                       | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020072 |      | 1       | Clarification on serving cell in SIB11  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020073 | 1319 | 1       | Treatment of optional elements in RB control messages                                 | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020073 | 1323 | 1       | Procedure Performance for TDD UL physical Channel Control                             | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020250 | 1331 | 1       | Clarification to physical channel establishment criteria                              | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020249 | 1333 | 1       | OTDOA Assistance Data   | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020073 | 1337 |         | Retransmission of uplink direct transfer at RLC re-establishment and inter-RAT change | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020073 | 1339 |         | Correction to IE "UL interference" for UTRA TDD                                       | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020074 | 1343 |         | Corrections of UE Positioning requirements  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020074 | 1345 | 1       | Multimode speech in default configurations  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020073 | 1347 | 1       | Correction to UE Id for DSCH  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020073 | 1349 |         | Corrections to support combined Cell/URA update and SRNS relocation                   | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020073 | 1351 | l       | Number of UTRAN and Inter-RAT frequencies   | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020073 | 1353 |         | Abortion of signalling connection establishment                                       | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020073 | 1358 |         | Modification of GPS timing representation to avoid large integers                     | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020074 | 1360 |         | Additional TFCS selection guidelines  | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020074 | 1362 |         | Clarification of layer 3 filtering of measurements in the UE                          | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020210 | 1364 | 1       | Improved readability of procedural text   | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020228 | 1366 | 1       | Clarification on ICS version within UE radio access capabilities                      | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020233 | 1368 | 1       | Clarification of Maximum number of TFC in the TFCS                                    | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020238 | 1370 | 1       | Support of UP measurement reporting in CELL_PCH/URA_PCH                               | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020082 |      | 2       | Correction to include Cell ID for Cell_DCH state                                      | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020082 |      | 2       | Correction of Transparent mode signalling for UL rate control                         | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020082 |      | 2       | Introduction of default radio configurations for UMTS_AMR2 with four speech modes     | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020082 | 1223 | 1       | Acquisition of PLMN identity of neighbour cells via SIB 18                            | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020082 | 1254 | 1       | Various ASN.1 Corrections   | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020082 | 1290 | T .     | Handover from UTRAN failure   | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020082 | 1335 | 1       | Corrections to indicate that SIB 14 is not used by 1.28 TDD                           | 4.3.0 | 4.4.0 |
|         | RP-15 | RP-020084 |      | 2       | Support of flexible hard split mode   | 4.4.0 | 5.0.0 |
|         | RP-15 | RP-020090 |      | 1       | Introduction of the parameters of OTDOA with IPDL for 1.28 Mcps TDD                   | 4.4.0 | 5.0.0 |
|         | RP-15 | RP-020085 | 1291 | 1       | Radio link timing   | 4.4.0 | 5.0.0 |
|         | RP-15 | RP-020094 | 1305 | 2       | Introduction of HSDPA   | 4.4.0 | 5.0.0 |
| 06/2002 | RP-16 | RP-020330 |      |         | ASN.1 Corrections   | 5.0.0 | 5.1.0 |
|         | RP-16 | RP-020330 |      | t       | Clarification of unnecessary MP IEs in RADIO BEARER                                   | 5.0.0 | 5.1.0 |
|         |       |           |      |         | RECONFIGURATION   |       |       |
|         | RP-16 | RP-020330 | 1379 | L       | Correction on SIB type  | 5.0.0 | 5.1.0 |

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|        | RP-16          | RP-020330              | 1382 |         | Clarification to the handling of IE "Cells for measurement" received in SIB 11/12   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020330              | 1385 | 1       | Correction to Cell Update procedure   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020330              | 1388 |         | Correction to handling of FACH measurement occasion info in SIB12   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020331              | 1392 |         | Actions when optional IE "Maximum allowed UL TX power" is missing   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020331              | 1395 |         | Corrections concerning default configurations   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020331              | 1398 |         | Correction concerning when hard handover specific handling applies  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020331              | 1401 |         | Handling of variables CELL_INFO_LIST and MEASUREMENT_IDENTITY   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020331              |      |         | IE "Cell Synchronisation Information"   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020331              |      |         | Corrections to Cell Individual Offset   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020332              |      |         | Clarification to Compressed Mode Status Info  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020332              |      |         | Clarification of OTDOA quality figure   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020332              |      |         | Correction to Cell Access Restriction for SIB4  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020332              |      |         | Corrections concerning spare values and comments  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020332              |      |         | Variable for shared channel configurations  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020332              |      | 1       | Integrity protection on RB0   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020333              |      | 1       | Periodic cell update clarifications   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020333              |      |         | Multiple cells triggering event 1D  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020333              |      |         | Disjoint Active Sets in the Active Set Update procedure   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020333              |      |         | Deletion on compressed mode patterns when moving to CELL_FACH state   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020333              |      |         | TDD C-RNTI in Cell DCH  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020333              | 1444 | 1       | CCTrCH Release in TDD   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020334              |      |         | Layer 3 retransmission of SIGNALLING CONNECTION RELEASE INDICATION  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020334              |      |         | Alignment of tabular and ASN.1 for UTRAN GPS timing of cell frames resolution   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020334              |      |         | Correction to Default Radio Configuration Timers  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020334              |      |         | Clarification to number of L3 filters   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020334              |      | 1       |   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020334              |      |         | DCH quality target  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020335              |      |         | Correction to RB Mapping Info   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020335              |      | 1       | Ciphering activation for TM bearers   | 5.0.0          | 5.1.0          |
|        | RP-16<br>RP-16 | RP-020335<br>RP-020382 |      | 1       | TFCS selection guideline correction  Clarification of Measurement Validity and Valid Measurement  | 5.0.0<br>5.0.0 | 5.1.0<br>5.1.0 |
|        | RP-16          | RP-020363              | 1483 | 1       | Objects Remaining clarification of Measurement Validity and Valid   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020381              | 1486 | 1       | Measurement Objects Traffic Volume Measurement clarifications   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020381              |      | +       | Correction to handling of IE 'Downlink information for each RL'   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020336              |      |         | Corrections to Security procedure on Missing integrity protection reset on relocation and counter check response actions for asymmetric bearer configurations | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020336              | 1495 | l       | Corrections to cell update interactions with security and SRNS Relocation   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020336              | 1498 |         | "Out of service" area definition  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020339              |      | 1       | RRC connection release procedure in CELL_DCH state  | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020339              |      | f       | Correction to DL TM DCCH TF size for Default Configurations   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020339              |      | 1       | Corrections in ASN.1 related to SRNS relocation   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020341              |      | 1       | HS-DSCH related corrections   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020341              |      | 1       | Removal of BLER threshold from IE "Measurement Feedback info"   | 5.0.0          | 5.1.0          |
|        | RP-16          | RP-020345              |      | 1       | RFC 3095 context relocation   | 5.0.0          | 5.1.0          |
| 9/2002 | RP-17          | RP-020541              |      | 1       | UE behaviour when active set cells are not included in CELL_INFO_LIST   | 5.1.0          | 5.2.0          |
|        | RP-17          | RP-020541              | 1507 | 1       | Corrections to handling of IE "Cells for measurement"   | 5.1.0          | 5.2.0          |
|        | RP-17          | RP-020541              | 1510 |         | Clarification on the use of UE radio access capability extensions within the INTER RAT HANDOVER INFO message  | 5.1.0          | 5.2.0          |
|        | RP-17          | RP-020541              | 1513 | 1       | Correction to RRC connection procedure  | 5.1.0          | 5.2.0          |

| _    | 1     | 1         |      | 1_      | Change history  |       | 1     |
|------|-------|-----------|------|---------|---|-------|-------|
| Date | TSG # | TSG Doc.  | CR   | Re<br>v | Subject/Comment   | Old   | New   |
|      | RP-17 | RP-020541 | 1516 | Ť       | Correction to the variable TGPS_IDENTITY  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020541 | 1522 |         | Missing IEs in RLC info   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020542 | 1528 | 1       | Corrections of UE internal measurement reporting events   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020542 | 1531 | 2       | UE behaviour upon reception of reconfiguration  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020542 | 1534 |         | Application of integrity keys in case of a pending CN domain switch during a SRNS relocation                    | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020542 |      | 1       | Clarifications on Quality Measurements  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020542 | 1540 |         | Correction of DPCH constant value in TDD default radio configurations   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020542 | 1543 |         | Handling of UE internal measurement information in broadcast  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020543 | 1546 |         | Observed time difference to GSM reporting indicator   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020543 | 1551 |         | Corrections on Security relative to ciphering of TM bearers and to SRNS relocation                              | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020543 | 1554 |         | Coding of IE NC mode  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020543 | 1557 |         | Clarification to filtered measurement quantities  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020543 | 1560 |         | and 1f  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020543 | 1563 | 1       | Optional and Mandatory fields in Measurement Control  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020544 | 1566 |         | Clarifications to Reporting Cell Status   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020544 | 1569 |         | Clarification to minimum SF   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020544 | 1572 |         | Clarifications to inter-frequency measurements  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020544 | 1578 | 2       | Ciphering when HO to UMTS of signalling only connection   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020544 | 1581 |         | Inter RAT handover from UTRAN   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020544 | 1584 |         | Correction to Cell Update procedure with cause "Radio link failure"   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020545 |      |         | Correction to the handling of IE "UTRAN DRX cycle length coefficient" in CELL/URA UPDATE procedure              | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020545 | 1590 |         | Correction to RLC unrecoverable error occurs in CELL_DCH state  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020545 | 1593 |         | Use of scrambling change when activating CM pattern using SF/2 by MEASUREMENT CONTROL                           | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020545 |      |         | Actions when optional IE "Maximum allowed UL TX power" is missing   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020630 | 1599 | 1       | IP_offset correction  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020545 | 1602 |         | Clarification on the IE "Frequency Info"  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020546 |      |         | Correction of RNTI used in PUSCH capacity request and physical shared channel allocation                        | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020546 |      |         | Correction to allowed logical channel list choice for RACH transport channels                                   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020654 |      | 1       | Clarification of SRNS Relocation Info   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020546 |      |         | DCH quality target  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020546 | 1617 |         | Handling of variables CELL_INFO_LIST and MEASUREMENT_IDENTITY(2)  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020546 |      | 1       | Correction of secondary CCPCH selection and PRACH selection   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020547 | 1623 |         | RRC TVM Corrections   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020547 | 1626 |         | Correction of Transmission Gap Distance semantics description   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020547 | 1629 |         | Corrections to Active Set Update and simultaneous reconfiguration   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020547 | 1632 |         | UE behaviour following RLC size change  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020547 | 1635 |         | RRC SN in uplink  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020547 | 1638 |         | Multiplexing of Tr mode RBs of different CN domains on the same transport channel                               | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020548 | 1641 | Î       | Security clarifications   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020548 | 1644 |         | Correction to the actions of "out of service area" and "in service area"  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020548 | 1647 |         | TVM: pending time after trigger and initial conditions  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020548 |      | 1       | Handling of Downlink information for each RL in reconfiguration messages  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020548 | 1655 |         | Corrections to Cell Update/URA Update Procedure in case of nested cell updates and simultaneous SRNS relocation | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020548 | 1670 |         | Corrections to security   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020631 |      | 1       | SRNS relocation with integrity  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020549 |      |         | Reception of MEASUREMENT CONTROL in state CELL_FACH   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020549 | 1679 | T       | Unsupported configuration   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020549 | 1682 |         | Handover corrections  | 5.1.0 | 5.2.0 |
|      |       |           |      |         |   |       |       |

|      | _     |           |      |          | Change history  |       |       |
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|      | RP-17 | RP-020558 | 1575 | 1        | Correction of SFN-SFN Measurement   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020559 | 1661 |          | Corrections to Synchronisation for 1.28 Mcps TDD  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020553 | 1657 |          | Corrections on Power Control for 1.28 Mcps TDD  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020553 | 1659 |          | Correction to RLC entity re-establishment during SRNS relocation  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020553 | 1663 |          | Reintroduction of IE "SRB delay" in Rel-4 ASN.1   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020553 | 1665 |          | Corrections to ASN.1 for SRNC relocation container  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020553 | 1667 |          | Unused elements in ASN.1  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020557 |      |          | Correction on Radio link timing   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020662 |      | 2        | Physical layer IEs for HSDPA  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020557 | 1652 |          | Transport channel information elements for HSDPA  | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020590 |      |          | TX diversity on radio links in the active set   | 5.1.0 | 5.2.0 |
|      | RP-17 | RP-020557 |      |          | Mandatory Support of dedicated pilots for channel estimation  | 5.1.0 | 5.2.0 |
|      | RP-18 | RP-020721 |      |          | Corrections to IEs "Ellipsoid point with Altitude and uncertainty Ellipsoid" and "Ellipsoid point with uncertainty Ellipse" | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020721 | 1690 | 1        | Handling of Ciphering and integrity protection activation times   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020721 |      | t        | Handling of measurements at state transitions to/from DCH state.  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020721 |      | 2        | Measurement related corrections   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020721 |      | 1        | ASN.1 of the SRNS relocation info   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020721 |      | 1        | Corrections to PRACH selection  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020722 |      | Ė        | TDD Downlink Path Loss for interfrequency measurement   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020892 |      | 1        | Correction on coding of GSM Classmark 2 and 3   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020722 |      | i -      | Correction on Frame Allocation Calculation  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020722 |      |          | Inter-frequency measurements  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020722 |      | 1        | Maximum Allowed UL TX Power   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020722 |      |          | START values for the initialisation of SRB counters and UTRAN   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020723 | 1731 |          | incorrect actions Correction to the RRC transaction table management  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020723 |      | 1        | Use of DCH Quality Target with Blind Transport Format Detection   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020723 |      |          | Correction to storing current TFC subset in variable TFC_SUBSET for TDD   |       | 5.3.0 |
|      | RP-18 | RP-020723 | 1745 |          | Security at inter-RAT handover  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020723 |      |          | Integrity protection activations times  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020723 |      |          | Additional measurements   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020724 |      |          | DPCH compressed mode info in Downlink information common for all RLs  |       | 5.3.0 |
|      | RP-18 | RP-020724 | 1757 | 1        | Handling of RB mapping  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020724 |      | Ė        | RLC window size in default configurations   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020724 |      |          | Corrections to Activation time  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020724 |      |          | Numbering of "ASC Setting" IEs included in "PRACH partitioning" IE  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020724 | 1779 | 2        | Correction on support for compressed mode   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020903 |      | 3        | Introduction of backwards compatible correction mechanism   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020727 |      |          | Signalling of the timing adjustment mode for closed loop Tx diversity   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020893 | 1810 | t        | Handling of hyper frame numbers   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020726 |      | 2        | Early UE Specific Behaviour Information in RRC Connection Request / interRAT info   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020858 | 1701 | t        | Correction of ASN1 IE "InterFreqCellInfoList-r4"  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020858 |      |          | Correction of Special Burst Scheduling for TDD  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020858 |      | 1        | Correction of measurement reporting event 6f for 1.28 Mcps TDD  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020858 |      | 1        | Ciphering during SRNS relocation without reuse of COUNT-C   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020858 |      | 1        | Correction to IE "Intra Domain NAS Node Selector"   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020858 |      | $\vdash$ | Correction to PRACH selection   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020859 |      | 1        | Correction to reporting event 6f for FDD  | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020859 |      | 1        | ASN.1 corrections   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020859 |      | 1        | Asymmetric ROHC Configuration   | 5.2.0 | 5.3.0 |
|      | RP-18 | RP-020859 |      | $\vdash$ | Reference Cell for GSM OTD Measurement  | 5.2.0 | 5.3.0 |
|      |       |           |      |          |   |       |       |

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|--------|----------------|------------------------|------|----|--|----------------|----------------|
|        | RP-18          | RP-020736              | 1701 | ٧  | Correction to IF "Access stratum releases indicates"   | 5.2.0          | 5.3.0          |
|        | RP-18          | RP-020736              |      |    | Correction to IE "Access stratum release indicator"  RLC capability for HSDPA  | 5.2.0          | 5.3.0          |
|        | RP-18          | RP-020736              |      |    | Dedicated pilot bits for HS-DSCH   | 5.2.0          | 5.3.0          |
|        | RP-18          | RP-020736              |      |    | Expansion of CPICH RSCP range  | 5.2.0          | 5.3.0          |
|        | RP-18          | RP-020736              |      |    | L3 Retransmission of event 1b  | 5.2.0          | 5.3.0          |
|        |                |                        |      |    |  |                |                |
|        | RP-18<br>RP-18 | RP-020736              |      |    | DPC mode change in ACTIVE SET UPDATE message   | 5.2.0          | 5.3.0<br>5.3.0 |
|        | _              | RP-020736              |      | _  | Correction to handling of IE 'Downlink information for each RL'  | 5.2.0          |                |
| 0/0000 | RP-18          | RP-020896              |      | 2  | HSDPA parameter value ranges   | 5.2.0          | 5.3.0          |
| 3/2003 | RP-19          | RP-030103              |      |    | ASN.1 of the SRNS relocation Info  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030103              |      |    | Correction to procedural text for Physical Shared Channel Allocation (TDD only)  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030103              |      | 1  | CM and state transition related to measurements, additional measurements, virtual active set and periodic measurements | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030103              |      |    | Physical channel failure and radio link re-establishment   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030103              | 1825 |    | Correction concerning bit numbering convention   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030104              | 1831 |    | Additional Measurement reporting list  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030104              | 1834 | 2  | Correction on RRC integrity protection procedure   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030104              | 1837 |    | Reporting Cell Status and Event 2A   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030104              | 1840 |    | Correction to the handling of variable TGPS_IDENTITY and IE "Triggering condition 1/2"                                 | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030104              | 1843 | 1  | Hard handover with pending ciphering activation times  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030105              | 1846 |    | Correction of default configurations   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030105              | 1849 |    | Correction to UE behaviour on entering RRC Connected mode  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030105              |      |    | Update of Start values in USIM on inter-RAT transitions and transitions to idle mode                                   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030082              | 1858 |    | Corrections to Channelisation Code TFCI Mapping for TDD  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030111              | 1860 |    | Correction of PNBSCH for 1.28Mcps TDD  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030111              | 1862 |    | Correction of SFN-SFN observed time difference for 1.28Mcps TDD  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030111              | 1864 | 3  | ASN.1 corrections concerning missing UE capability extensions  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030111              | 1866 | Ŭ  | Extensions for 1.28 Mcps specific elements in system information   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030111              |      |    | Corrections to power control parameter signalling for 1.28 Mcps  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030117              | 1872 |    | TDD HS-SICH Power Control  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030117              |      |    | Usage of separate scrambling code for HSDPA  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030117<br>RP-030119 |      |    | TDD HS-DSCH midamble shift and burst type  |                |                |
|        | RP-19          | RP-030119<br>RP-030117 |      |    | Corrections to the IE "Added or Reconfigured MAC-d flow" and the   | 5.3.0<br>5.3.0 | 5.4.0<br>5.4.0 |
|        | RP-19          | RP-030117              | 1977 | 1  | associated table in 10.3.10  Network Assisted Cell Change from UTRAN to GERAN  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030117              |      | 1  | Defining more than one DSCH / USCH transport channel in  | 5.3.0          | 5.4.0          |
|        |                |                        |      | 1  | PDSCH and PUSCH system information (TDD only)  |                |                |
|        | RP-19          | RP-030117              |      | _  | Introducing the use of pre-defined configurations within UTRA  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030120              |      |    | Group release (without security  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030105              |      |    | Correction to Inter-RAT Measurement Report   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030106              |      |    | Correction of signalling of transport block size for DSCH  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030106              |      |    | PS service continuity when moving between 3G and 2G  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030106              |      | 1  | Multiple activations of the same compressed mode pattern   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030106              |      |    | Setting of ciphering activation time for TM bearers  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030117              |      |    | Correction of shadow CR implementation   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030111              | 1899 |    | Removal of MRRU parameter in PDCP info   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030117              | 1900 |    | Measurement event for evaluation of best HS-DSCH cel   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030105              | 1902 | 1  | NAS and Integrity procedure interaction  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030117              | 1903 |    | Correction to USBI   | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030187              | 1909 |    | GPS navigation model update mechanism  | 5.3.0          | 5.4.0          |
|        | RP-19          | RP-030201              |      |    | Layer 3 filtering definition   | 5.3.0          | 5.4.0          |
|        | RP-20          | RP-030293              |      |    | Handling of UP Assistance Data   | 5.4.0          | 5.5.0          |
|        | RP-20          | RP-030293              |      | 1  | Concerns on Procedures for Cell-ID Positioning Method  | 5.4.0          | 5.5.0          |
|        | RP-20          | RP-030293              |      | Ė  | Inconsistency between Procedural, ASN.1, and Tabular Aspects of UE Positioning Error                                   |                | 5.5.0          |

|         | -     |           | _    |         | Change history  | -     | _     |
|---------|-------|-----------|------|---------|---|-------|-------|
| Date    | TSG # | TSG Doc.  | CR   | Re<br>v | Subject/Comment   | Old   | New   |
|         | RP-20 | RP-030293 | 1922 |         | Removal of FFS (For further Study) and references to other working groups                                       | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030293 | 1926 |         | Key handling when entering idle mode and coding of security capabilities  | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030293 | 1929 |         | Security actions when SIM is present on RRC Connection Request  | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030294 | 1932 |         | Update of interfrequency measurement cell info list, reading of SIB11/12, inclusion of Measured Results on RACH | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030294 | 1937 |         | Additional measurements without measurement validity  | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030294 | 1940 |         | Handover to UTRAN in macrodiversity   | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030294 | 1943 | 1       | TVM Reporting in CELL_PCH state   | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030294 | 1946 | 1       | Initialisation of the Virtual Active Set  | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030295 | 1949 |         | IE "Tx diversity mode" in ACTIVE SET UPDATE message   | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030295 | 1952 | 1       | Correction to transport channel traffic volume measurement events 4a and 4b                                     | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030295 | 1955 |         | Maximum Number of GPS Almanac Messages to be Stored in UE_POSITIONING_GPS_DATA                                  | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030374 | 1958 | 2       | Stopping of RLC entities at relocation  | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030369 | 1978 | 4       | Ciphering Mode info IE in 2G-3G Handover  | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030295 | 1981 | l       | START values on 2G-3G handover  | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030298 | 1983 | İ       | ROHC profile signalling   | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030298 | 1959 | 1       | Optimisation of the INTER RAT HANDOVER INFO message   | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030350 | 1987 | 2       | Corrections to security procedures in case of pending security configurations at SRNS Relocation                | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030371 | 1990 |         | Setting of T317 to infinity and out of service behaviour  | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030303 | 1960 |         | Correction to the IE 'HS-DSCH capability class'   | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030303 | 1961 |         | Correction of "RB mapping info" in case HS-DSCH + DCH   | 5.4.0 | 5.5.0 |
|         | RP-20 | RP-030303 | 1963 |         | Explanation of CV-UE for the IE MidambleShift in the tabular  | 5.4.0 | 5.5.0 |
| 09/2003 | RP-21 | RP-030484 | 1993 |         | Handling of key sets at Inter-RAT Handover to UTRAN   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030484 | 1996 |         | Correction to UE Positioning privacy procedures   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030520 | 2003 | 2       | START calculation in connected mode   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030506 | 2000 | 1       | Reconfiguration with state transition to an indicated cell on a different frequency                             | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030484 | 2006 |         | PRACH channelisation code list limitation to align with TS 25.221   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030484 | 2009 |         | Handling of transport channel information at radio bearer release   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030485 | 2015 |         | Corrections for TDD for the IEs "Downlink DPCH info common for all radio links"                                 | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030485 | 2018 |         | TFCS selection guidelines for TFC Subset  | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030485 |      |         | Value range of UE Rx-Tx time difference type 2 measurement  | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030485 | 2033 |         | Activation Time for DSCH  | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030485 | 2044 |         | Correction of PDCP Configuration for RFC 2507   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030486 | 2048 |         | Corrections to event list handling  | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030486 | 2051 | 1       | Corrections to RACH reporting   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030486 | 2054 | İ       | Corrections to modification of Additional Measurement lists   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030486 | 2057 | İ       | UE positioning support in the UE  | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030478 | 2064 | İ       | Elimination of EPC mechanism  | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030486 | 2069 |         | UE behaviour in transition from CELL_DCH to CELL_FACH/<br>CELL_PCH/URA_PCH and Out of Service is detected       | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030505 | 2072 | 1       | Radio link failure during reconfiguration procedure   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030491 | 2020 | 1       | Ciphering of TM SRBs  | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030491 | 2022 | 1       | Correction on PDCP Header compression Configuration   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030491 | 2027 | 1       | Corrections for TDD PUSCH   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030495 | 1997 | ĺ       | Correction to UE behaviour on T317 expiry   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030495 | 2029 | 1       | Correcting value range of MAC-hs buffer ID  | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030495 | 2030 |         | Correction of handling of IE "MAC-hs reset indicator" in Added or Reconfigured DL TrCH information              | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030495 | 2035 | 1       | UE capability signalling for UMTS1800   | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030495 | 2039 |         | Handover between UTRAN and GERAN lu mode  | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030495 | 2040 | 1       | Updated references to the RRC State Indicator IE  | 5.5.0 | 5.6.0 |
|         | RP-21 | RP-030495 | 2041 |         | Corrections to Event 1D   | 5.5.0 | 5.6.0 |

|         | ·              | 1         |      |          | Change history  |                | 1     |
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| Date    | TSG #          | TSG Doc.  | CR   | Re<br>v  | Subject/Comment   | Old            | New   |
|         | RP-21          | RP-030449 | 2028 | İ        | Reconfiguration of MAC-d flow   | 5.5.0          | 5.6.0 |
|         | RP-21          | RP-030462 | 2061 |          | HS-SCCH transmit diversity mode   | 5.5.0          | 5.6.0 |
|         | RP-21          | RP-030503 | 2066 |          | Scrambling code & phase reference combinations for HS-DSCH (solution 2)   | 5.5.0          | 5.6.0 |
| 12/2003 | RP-22          | RP-030617 |      |          | Unsuccessful security mode control procedure and Integrity Protection   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030625 |      |          | START value calculation for RLC size change   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030617 |      |          | UE Positioning UE based assisted GPS  | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030617 |      |          | Handling of zero-rate TrCHs in TFCS   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030617 |      | 3        | Measurement control for A-GPS   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030621 |      |          | Corrections to 1.28 Mcps TDD power control: ASN1/Tabular consistency, correction of omissions                                 | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030621 |      |          | UpPCH power control for 1.28Mcps  | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030617 |      | 1        | Interaction between compressed mode pattern activation and message activation time  | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030625 |      |          | Initialisation of virtual active set  | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030611 |      | 1        | Correction to Redirection procedure at RRC Connection Setup   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030610 |      | 2        | SFN associated with GPS timing of cell frame  | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030618 |      | <u> </u> | Correction to Handling SIB1   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030618 |      |          | Measurement Handling In State Transition for UE Positioning   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030618 |      |          | Corrections to UE positioning reporting for UE assisted and UE based methods  | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030662 |      | 1        | SIB 7 reading   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030662 |      |          | HFN initialisation in case of pending security configurations   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030621 |      | 1        | General protocol error handling failure for DL CCCH messages due to ASN.1 error   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030621 |      |          | Corrections relating to 1.28 Mcps TDD   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030621 |      |          | Missing CHOICE RLC Info type in the ASN.1 IE 'RB-<br>InformationSetup-r4'   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030625 |      | 1        | RRM in PCH/FACH   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030625 |      |          | Correction of operating band reference  | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030713 |      | 1        | Re-ordering Queue and HARQ Ids  | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030625 |      |          | Correction to the procedural description: Reconfiguration of MAC-d flow   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030625 |      | 1        | Enhancement of RRC transaction identifier for measurement control message   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030629 |      |          | Inclusion of a default configuration identity for AMR-WB  | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030625 |      |          | TDD C-RNTI in Cell DCH  | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030662 |      |          | Additional Measurements List Modify   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030625 |      |          | IP activation time for RB0  | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030722 |      | 3        | Minimum UE capability class   | 5.6.0          | 5.7.0 |
|         | RP-22          | RP-030612 |      | 4        | Measured results on RACH  | 5.6.0          | 5.7.0 |
|         | RP-22<br>RP-21 | RP-030625 |      | 1        | COUNT-I reverting in case Security Mode Control procedure failure  Maintaining the RRC Connection while Emergency camped on a | 5.6.0<br>5.5.0 | 5.7.0 |
|         | KP-21          | RP-030548 | 2034 | 1        | F-PLMN during OOS (note: it was decided that this CR would not be implemented until the Rel-6 would be created)               | 5.5.0          | 6.0.0 |
|         | RP-22          | RP-030630 | 2133 | 1        | Introduction of UMTS800   | 5.7.0          | 6.0.0 |
|         | RP-22          | RP-030721 |      | 1        | AS capability indication  | 5.7.0          | 6.0.0 |
|         | RP-22          | RP-030630 |      | t        | Introduction of new bands   | 5.7.0          | 6.0.0 |
|         | 1              | Editorial |      | t        | Repair of corrupted figures   | 6.0.0          | 6.0.1 |
| 03/2004 | RP-23          | RP-040095 | 2168 | 2        | Response on SRNS Relocation with Cell Update  | 6.0.1          | 6.1.0 |
|         | RP-23          | RP-040095 | 2172 | 1        | TPC Combination Index in SRNC relocation  | 6.0.1          | 6.1.0 |
|         | RP-23          | RP-040107 | 2176 | 1        | Correction to "Current TGPS Status Flag"  | 6.0.1          | 6.1.0 |
|         | RP-23          | RP-040095 |      | 1        | Invalidation of START value in USIM/UE.   | 6.0.1          | 6.1.0 |
|         | RP-23          | RP-040095 |      | 1        | Uplink Integrity protection handling in case of N302 increment  | 6.0.1          | 6.1.0 |
|         | RP-23          | RP-040095 |      | 1        | Amount of reporting for UE-based and UE assisted A-GPS  | 6.0.1          | 6.1.0 |
|         | RP-23          | RP-040101 |      | 1        | Ensuring decoding possibility related to Introduction of new bands  | 6.0.1          | 6.1.0 |
|         | RP-23          | RP-040101 |      | 2        | Clarification to multimode indication   | 6.0.1          | 6.1.0 |
|         | RP-23          | RP-040101 |      | t        | Correction for 1.28 Mcps TDD Power Control  | 6.0.1          | 6.1.0 |
|         | RP-23          | RP-040101 | 2203 | 1        | Missing "pdcp-SN-info" in ASN.1 IE "RB-InformationReconfig-r4"  | 6.0.1          | 6.1.0 |

|         | _     |           |      |               | Change history  | _     |       |
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| Date    | TSG # | TSG Doc.  | CR   | Re<br>v       | Subject/Comment   | Old   | New   |
|         | RP-23 | RP-040107 | 2207 |               | Correction to HS-SCCH info  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040107 |      |               | Correction to HS-SCCH info  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040107 |      |               | Correction to activation time for HS-DSCH reconfiguration in TDD  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040131 | 2217 | 3             | Connected mode handling IE 'CN domain system information' in SIB1   | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040096 | 2221 |               | Correction to event 6D  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040096 | 2225 | 1             | Correction to UE positioning reporting for GPS standalone operation mode  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040092 | 2229 |               | Frequency band alignment with 25.101  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040096 | 2235 |               | UTRAN setting of the activation time for TM bearers in Ciphering Mode info IE   | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040096 | 2239 |               | Corrections to "Entered parameter"  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040097 | 2243 |               | Corrections to TFC Subset Functionality   | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040097 | 2247 | 1             | Waiting for RLC-ACK on UMI  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040105 | 2249 |               | Invalid Simultaneous Reconfiguration Criteria   | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040101 | 2252 | 1             | General correction and alignment of the ASN.1 and tabular   | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040121 | 2253 | 1             | Introduction of UMTS1700/2100 (Band IV)   | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040091 | 2254 |               | Introduction of UMTS850 (Band V)  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040101 | 2257 |               | Introduction of VLEC in every message branch  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040107 | 2259 |               | Simultaneous Reception of S-CCPCH and HS-DSCH   | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040107 | 2261 |               | Cell reselection between UTRAN and GERAN lu mode  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040108 | 2263 |               | HSDPA related corrections on buffer flushing on state transitions, RAT transitions, error cases, MAC-hs reconfiguration and readiness to receive HS-PDSCH | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040106 | 2265 | 2             | Signalling of MAC-hs Reset  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040131 | 2267 | 2             | Modification of Inter-frequency CELL_INFO_LIST  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040131 | 2269 | 1             | [VAS] 1B-1C conflicts when 1A is not configured   | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040131 | 2271 | 1             | Handling of wait time in RRC connection reject  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040108 | 2274 |               | Misalignments between R'99 and Rel-5 procedures   | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040097 | 2281 |               | Issues related to Inter-RAT and Inter-frequency handovers   | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040097 | 2285 | 1             | Corrections to reconfiguration scenarios and ciphering of TM RBs  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040110 | 2286 | 4             | Addition of "cell selection indication" for cell selection at release of RRC connection and RRC connection reject with re-direction                       | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040129 | 2288 |               | HSDPA capability for multimode FDD-TDD terminals  | 6.0.1 | 6.1.0 |
|         | RP-23 | RP-040095 | 2168 | 2             | Response on SRNS Relocation with Cell Update  | 6.0.1 | 6.1.0 |
| 06/2004 | RP-24 | RP-040203 | 2292 |               | Empty non-critical extensions   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040211 | 2294 | 1             | Missing "v3g0" extension in the UE CAPABILITY INFORMATION   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040203 | 2303 |               | Correction on System Information in TDD   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040236 | 2305 |               | Corrections to Cell Change Order from UTRAN procedure   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040206 | 2308 |               | Correction on SFN-SFN time difference misalignment in 1.28 Mcps TDD   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040207 | 2311 |               | ASN.1 correction leftovers  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040210 |      |               | Closing the REL-5 extensions in the ASN.1   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040207 |      |               | Incorrect presence of UE-RadioAccessCapability extension in RRC CONNECTION SETUP COMPLETE   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040210 | 2318 | I             | Unnecessary MAC-d flow identity in the IE "DL-TrCH-Type-r5"   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040211 |      | 1             | UE capability enquiry for GERAN lu mode   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040207 |      | <del>l'</del> | Clean up of SRNS Relocation Info REL-4 version  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040210 |      | 1             | Tabular correction for RADIO BEARER RELEASE message   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040210 |      | $\vdash$      | Misalignments betwen R'99 and Rel-5 procedures  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040210 |      |               | Erroneous setting of Re-establsish Indicator in case of SRNS relocation   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040207 | 2332 | I             | Correction to IE "Cell Info"  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040210 |      | 1             | Correction Concerning UE Positioning Measurement  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040236 |      | $\vdash$      | Pending compressed mode reconfigurations  | 6.1.0 | 6.2.0 |
|         |       | RP-040236 |      |               | Active compressed mode patterns with same measurement purpose   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040211 | 2340 |               | Correction to Information Elements for UE Rx-Tx time difference   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040210 |      |               | Naming correction in the HS-DSCH IE Measurement Feedback Information  | 6.1.0 | 6.2.0 |
|         |       |           | I    | 1             | momadon   | I     | 1     |

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| Date    | TSG # | TSG Doc.  | CR   | Re<br>v | Subject/Comment   | Old   | New   |
|         | RP-24 | RP-040206 | 2345 |         | Clarification about open loop power control in 1.28Mcps TDD   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040206 | 2348 |         | Clarification about measurement control system information in TDD mode  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040211 | 2350 |         | Correction to timing-maintained hard handover regarding the UL transmission timing  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040236 | 2354 | 2       | Selection of suitable cell  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040236 | 2356 |         | Check of the PLMN identity in the MIB when selecting a new cell   | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040211 | 2358 |         | Compressed INTER RAT HANDOVER INFO message modifications/corrections  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040215 | 2359 |         | The ASN.1 definition of IE "SysInfoType5bis"  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040224 | 2361 |         | RLC size handling and RLC re-establishment  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040212 | 2363 |         | Restrict operation of the virtual active set  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040213 |      |         | Usage of different RB mapping info  | 6.1.0 | 6.2.0 |
|         | RP-24 | RP-040256 | 2367 | 1       | Clarification on UE procedure in case of HHO failure  | 6.1.0 | 6.2.0 |
| 09/2004 | RP-25 | RP-040327 | 2373 |         | TDD misalignment between tabular and ASN.1 definitions of UL Transport channel information common for all transport channels and special burst scheduling | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040327 | 2377 |         | Definition of parameters for UE-assisted A-GPS  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040339 | 2378 | 2       | Addition of UMTS850 (Band V) in the tabular   | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040360 | 2381 |         | Default Configurations for multiple AMR Rate Configurations   | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040319 | 2384 |         | Correction on PRACH selection in 1.28Mcps TDD   | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040334 | 2386 |         | Inconsistency in UE action for HFN initialisation   | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040334 | 2388 |         | Usage of different RB mapping info for TDD  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040334 | 2390 |         | TDD HS-DSCH Corrections   | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040334 | 2392 |         | Alignment of Tabular Definition with ASN.1 for HS-SCCH Info   | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040348 | 2394 | 1       | Correction to HS-DSCH reception conditions  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040334 | 2396 |         | Correction to RB mapping check  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040334 | 2398 | t       | Position Timestamp for A-GPS  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040334 | 2400 | t       | Pending compressed mode reconfigurations  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040335 | 2402 | t       | Predefined configurations for the RRC connection request  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040335 | 2404 |         | Cell update during reconfiguration from CELL_FACH to CELL_PCH   | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040335 | 2406 |         | UE actions for Delta_ACK/NACK and repetition factor   | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040335 | 2408 |         | Calculation of UL transmit power for HS-SICH (TDD)  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040335 | 2410 | t       | Handling of Timer T302 Expiry   | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040335 | 2412 | t       | Correct naming for HS-DSCH with DCH multiplexing option   | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040335 | 2414 |         | Compressed Pre-defined configurations description in new Annex C  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040335 | 2416 |         | Integration between integrity protection and the sending of downlink messages during SRNS relocation  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040328 | 2418 |         | Corrections to restrictions of operation of the virtual active set  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040336 | 2420 |         | UE actions for received new keys  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040336 | 2422 | 1       | Scrambling Code Change  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040328 | 2428 | Ī       | Clarifications to VAS functionality   | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040336 | 2430 | Ī       | UE security capability in INTER_RAT handover  | 6.2.0 | 6.3.0 |
|         | RP-25 | RP-040336 | 2432 |         | Correction to the Radio Link Failure behaviour  | 6.2.0 | 6.3.0 |
| 12/2004 | RP-26 | RP-040481 | 2434 |         | Correction to measured results on RACH  | 6.3.0 | 6.4.0 |
|         | RP-26 | RP-040481 | 2436 |         | T305 handling upon a state transition   | 6.3.0 | 6.4.0 |
|         | RP-26 | RP-040481 | 2438 |         | Handling of pending AM RLC unrecoverable errors signalled by cell update  | 6.3.0 | 6.4.0 |
|         | RP-26 | RP-040476 | 2442 |         | Correction to maximum length of CTCH period   | 6.3.0 | 6.4.0 |
|         | RP-26 | RP-040481 | 2444 |         | TPC step size in default configurations   | 6.3.0 | 6.4.0 |
|         | RP-26 | RP-040474 | 2448 |         | References to ITU-T Recommendations on ASN.1  | 6.3.0 | 6.4.0 |
|         | RP-26 | RP-040477 | 2451 |         | ASN.1 clarification on Measurement Report for 1.28 Mcps TDD   | 6.3.0 | 6.4.0 |
|         | RP-26 | RP-040481 | 2453 | 1       | Correction to HS-DSCH reception conditions  | 6.3.0 | 6.4.0 |
|         | RP-26 | RP-040481 | 2455 | 1       | MAC-hs Reset procedure  | 6.3.0 | 6.4.0 |
|         | RP-26 | RP-040526 | 2457 | 2       | Cell selection and reselection parameters   | 6.3.0 | 6.4.0 |
|         | RP-26 | RP-040482 | 2459 | 1       | Clarification the PDCP capability- Max HC context space   | 6.3.0 | 6.4.0 |

| _       | 1              | 1                      |       |         | Change history  |       | 1     |
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|         | RP-26          | RP-040482              | 2461  | ľ       | Corrections to IE "WAIT TIME" = 0   | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040482              | 2463  | 1       | RRC transaction identifier in the MEASUREMENT CONTROL   | 6.3.0 | 6.4.0 |
|         | DD 00          | DD 040400              | 0.405 |         | message   | 000   | 0.4.0 |
|         | RP-26<br>RP-26 | RP-040482<br>RP-040477 |       | 4       | Correction to intra-frequency measurement handling in SIB11   | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040477              | 2468  | 1       | Missing OTDOA TDD related v4b0 extension in MEASUREMENT CONTROL                                     | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040482              | 2470  | 2       | Clarification of Radio Bearer Downlink Ciphering Activation Time Info                               | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040520              | 2472  | 2       | TFC Subset Variable Usage and Application of Transport Format Combination Subset                    | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040505              | 2474  |         | Use of preconfiguration in the RADIO BEARER RECONFIGURATION message                                 | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040505              | 2476  |         | UTRAN setting of ciphering activation time for SRB2   | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040505              | 2478  |         | Correction to ASN1 IE "srb-SpecificIntegrityProtInfo"   | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040522              | 2480  | 2       | Criteria for initiating cell update on receiving "Frequency info" IE in CELL UPDATE CONFIRM message | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040505              | 2482  |         | Traffic volume measurements in PCH states   | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040505              |       |         | Failure cause indication on Cell Update   | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040495              | 2487  | 1       | Network Sharing and multiple PLMN identities  | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040505              | 2493  |         | Inter-RAT measurement control information used  | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040491              | 2494  |         | ASN.1 update for the introduction of MBMS   | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040491              | 2495  | 1       | Introduction of MBMS  | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040543              | 2496  | 2       | Preamble and Postamble to reduce HS-DPCCH transmit power  | 6.3.0 | 6.4.0 |
|         | RP-26          | RP-040507              | 2497  |         | Introduction of E-DCH   | 6.3.0 | 6.4.0 |
| 03/2005 | RP-27          | RP-050038              | 2491  | 2       | Removal of TGPL2  | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050069              | 2499  |         | Minor HSDPA related corrections   | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050169              | 2501  |         | Integrity protection related information in the SRNS relocation info                                | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050069              | 2503  |         | Number of timeslots that can be used for HS-PDSCH resource for 3.84 Mcps TDD                        | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050089              | 2504  |         | HS-DSCH operation without a DL DPCH for 3.84 Mcps TDD   | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050114              | 2506  |         | Removal of unnecessary cell updates on receiving "Frequency info" IE in CELL UPDATE CONFIRM message | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050069              | 2508  |         | ASN.1 clarification on Cell and Channel Identity info for 1.28 Mcps TDD                             | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050070              | 2510  |         | Handling of TM SRB's at radio link failure  | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050070              | 2513  |         | Removal of the UARFCN uplink (Nu) in the informative Annex A.3                                      | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050070              | 2515  | 1       | Correction on PRACH selection   | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050067              | 2517  | 3       | Lossless DL RLC PDU size change   | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050069              | 2519  |         | Clarification of GERAN (P)SI message coding in NACC   | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050070              | 2521  |         | Unsupported RLC mode reconfigurations   | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050070              | 2523  |         | Correction to Inter RAT cell info indication  | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050086              |       |         | Correction to network sharing functionality   | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050086              |       |         | Network sharing corrections   | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050110              |       | 1       | CN domain specific Access Class Barring   | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050081              |       |         | Corrections to "selected PLMN" in access stratum  | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050074              |       |         | Introduction of F-DPCH  | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050084              |       |         | Minor E-DCH related corrections   | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050079              |       | 2       | Miscellaneous MBMS corrections  | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050087              |       |         | Additional Frequency Bands  | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050084              |       |         | Introduction of E-DCH in the ASN.1  | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050097              |       |         | Improvements to uplink closed loop power control for 1.28 Mcps TDD                                  | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050079              |       | 1       | MBMS Corrections to 25.331 ASN.1  | 6.4.0 | 6.5.0 |
|         | RP-27          | RP-050128              | 2538  | 1       | Correction to cell selection and reselection parameters to enable enhanced cell reselection         | 6.4.0 | 6.5.0 |
| 06/2005 | RP-28          | RP-050253              | 2539  | 3       | Faster L1 DCH synchronization   | 6.5.0 | 6.6.0 |
|         | RP-28          | RP-050339              | 2540  | 3       | Timing maintained hard handover   | 6.5.0 | 6.6.0 |
|         | RP-28          | RP-050320              |       | 1       | Removal of unnecessary Start values   | 6.5.0 | 6.6.0 |
|         | RP-28          | RP-050329              | 2542  |         | Merged CR alignement w.r.t. network sharing functionality   | 6.5.0 | 6.6.0 |

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|      | RP-28          | RP-050302              | 2545 | T       | Timing Reinitialized Handover & Radio Link Timing Adjustmen   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050302              | 2547 |         | Addition of omitted IE "report criteria" in MEASUREMENT   | 6.5.0          | 6.6.0          |
|      | DD 00          | DD 050040              | 0540 |         | CONTROL message "modify" command  | 0.5.0          | 0.00           |
|      | RP-28          | RP-050316              |      | 2       | Miscellaneous MBMS corrections (set II)   | 6.5.0          | 6.6.0          |
|      | RP-28<br>RP-28 | RP-050316<br>RP-050316 |      | 1       | Correction to MBMS notification procedure  FACH Measurement Occasion when UE receives MBMS                                | 6.5.0<br>6.5.0 | 6.6.0<br>6.6.0 |
|      | RP-28          | RP-050316              |      | -       | Frequency layer dispersion  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050318              |      | 2       | Signalling of target mode for ROHC operation  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050303              |      | 2       | Introduction of inter-frequency RACH measurement reporting  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050324              |      |         | Closed-Loop Power Control Improvements for 1.28 Mcps TDD –  | 6.5.0          | 6.6.0          |
|      |                |                        |      |         | ASN1 Corrections  |                |                |
|      | RP-28          | RP-050322              | 2556 |         | Release 6 HS-DSCH operation without a DL DPCH for 3.84 Mcps<br>TDD – Setting of Dhs-sync                                  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050320              | 2557 | 1       | Correction to the Amount of Reporting   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050320              | 2558 |         | Measurement report message definition when Inter-RAT cell info indication is used   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050320              | 2559 |         | Direct transition to DCH  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050316              |      | 1       | Addition of the number of MBMS Neighbour Cell PTM Information   | 6.5.0          | 6.6.0          |
|      |                |                        |      |         | messages to the MBMS Modified Services Information message  |                |                |
|      | RP-28          | RP-050316              | 2561 | 1       | Addition of MBMS counting for UEs in Cell_PCH and Cell_FACH states and addition of UE requested p-t-p bearer establishmen | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050320              | 2562 |         | Introduction of IE "RB information to reconfigure" in RB SETUP, RB RELEASE messages                                       | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050320              | 2564 |         | Including HS-DSCH serving cell change in ASU  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050320              | 2566 | 1       | Detection of Activation CFN wraparound in the UE during HS-   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050304              | 2568 | ╁       | DSCH cell change Correction to handling of keys at inter-RAT handove  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050302              |      | ╁       | CTFC calculation for DCH  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050302              |      | ╁       | Default RB identity in IE 'Signalling RB information to setup   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050302              |      | ╁       | Default configuration 13  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050320              |      | ╁       | UE L3 requirements for HS-DSCH mobility   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050374              | 2579 | 3       | Support for out-of-sequence PDUs in RLC-UM  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050305              | 2581 |         | Feature Clean Up: Removal of 80 ms TTI for DCH for all other  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050306              | 2583 |         | cases but when the UE supports SF512 Feature Clean Up: Removal of observed time difference to GSM                         | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050307              | 2585 |         | cell Feature Clean Up: Removal of SSDT  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050307              |      | ╂       | Feature Clean-up: Removal of DSCH (FDD)   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050308              |      | ╂       | Feature Clean Up: Removal of CPCH   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050309              |      | ╂       | Feature Clean Up: Removal of dedicated pilot as sole phase  | 6.5.0          | 6.6.0          |
|      | IXI -20        | 1000010                | 2591 |         | reference   | 0.5.0          | 0.0.0          |
|      | RP-28          | RP-050311              |      |         | Feature Clean Up: Removal of DRAC   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050312              |      |         | Feature Clean Up: Removal of TX diversity closed loop mode 2  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050313              |      |         | Feature Clean Up: Removal of Compressed mode by puncturing  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050327              | 2598 | 2       | Alignment of EUDCH RRC Stage-3 to Stage-2 status, including handling of 2 E-RNTIs   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050336              | 2599 |         | Radio link failure in F-DPCH  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050323              | 2600 | 1       | Setting up F-DPCH and E-DCH in RRC connection setup   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050316              | 2601 | 1       | Validity of PtM configurations  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050392              | 2602 | 1       | CCCH message enhancements   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050320              | 2604 |         | Quality measurement corrections   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050328              | 2605 |         | Clean-up of R6 ASN.1 leftovers  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050346              | 2607 | 2       | UE behaviour for DCH SIR target setting for Downlink power control  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050317              | 2608 | t       | RLC LI Optimization for VoiP  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050316              |      | 2       | Introduction of an S-CCPCH power offset difference in order to  | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050320              | 2610 |         | improve cell selection for soft and selective combining Erroneous implementation of CR#2501 in RRC specification          | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050329              | 2611 | ╂       | v6.5.0. Correction to network sharing   | 6.5.0          | 6.6.0          |
|      | RP-28          | RP-050329              |      | ╁       | MBMS asn1 issues  | 6.5.0          | 6.6.0          |

|         | 1-04 :: | 1-00-     | 1    | -  | Change history   | 1 - 1 - | 1     |
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|         | RP-28   | RP-050316 | 2614 |  | SCCPCH timing offset information for FDD MBMS soft combining   | 6.5.0   | 6.6.0 |
|         | RP-28   | RP-050316 | 2615 |  | MBMS corrections on signalling optimization  | 6.5.0   | 6.6.0 |
| 09/2005 | RP-29   | RP-050486 | 2616 |  | Support of Domain Specific Access control in Rel-5 Ues   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050465 | 2619 |  | ASN1 update for InterRATReportingQuantity  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050465 | 2621 | 1  | IE "RB information to reconfigure" for RADIO BEARER RECONFIGURATION message  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050465 | 2623 |  | Size of TFC Subset List for Transport Format Combination Control   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050465 | 2626 |  | RB mapping rules   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050587 | 2628 | 3  | Rules for triggering hard handover   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050465 | 2630 |  | RSCP value range extension   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050465 | 2632 |  | H-RNTI validity  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 | 2633 |  | Removal RLC-SDU alignment capability   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050458 | 2635 |  | Feature Clean Up: Removal of DRAC  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050458 | 2637 |  | DRAC & Dedicated pilots removal leftovers (asn1)   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050458 | 2639 |  | DRAC & CPCH removal leftovers (sib8,9,10)  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050458 | 2641 | 1  | Feature remove (Tabular/asn1 alignment)  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 | 2642 |  | Correction to UE L3 requirements for HS-DSCH mobility  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 |      | <u> </u>   | Rate Control Correction  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 |      |  | Introduction of container to facilitate transparent transfer of UE   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 | 2645 |  | capabilities Minor ASN.1 correction for TDD IEs Beacon PL Est and DHS- Sync  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 | 2646 | l  | Addition of ongoing reconfiguration indicator in cell update   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 |      |  | Faster L1 DCH synchronization  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 |      |  | Direct transition to DCH   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 |      |  | PSI messages in CELL CHANGE ORDER FROM UTRAN   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 |      |  | SRNS relocation info   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 |      | <u> </u>   | Correction to UE-assisted OTDOA support  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 |      |  | Correction to undefined UE behaviour in case of Cell-ID positioning with method type UE-based  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050482 | 2654 |  | Receiving "Frequency info" IE in CELL UPDATE CONFIRM message   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050483 | 2655 |  | Re-entry in service in CELL_PCH before T316 expiry   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050483 |      |  | ASN.1 alignment to Rel-5 of InterRATCellInfoIndication   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050483 |      |  | Addition of Inter-frequency measurements reporting on RACH reporting in the ASN.1 of RRC CONNECTION REQUEST and CELL UPDATE messages | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050483 | 2658 | 1  | Correction to the Amount of Reporting  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050483 | 2659 | l  | Minor correction of HS-DSCH/ E-DCH capability indication   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050476 | 2660 | l  | Modification of TPC command error rate granularity and range   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050473 |      | 1  | Introduction of PS handover between UTRAN and GERAN  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050483 |      |  | Including HS-DPCCH power offset and HARQ preamble mode in active set update  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050468 | 2663 |  | Minor MBMS corrections (set IV)  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050468 | 2664 |  | Clarification on MBMS modified services information IE   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050468 |      | t  | MBMS correction for recounting   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050468 |      | 1  | MBMS asn1 issues   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050471 |      | t  | E-DCH corrections and additions  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050471 |      | t  | E-DCH corrections  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050472 |      | 4  | E-DCH additions to active set update   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050471 |      | 1  | UE capabilities for E-DCH in 25.331  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050468 |      | ľ  | Conditional suspension of CELL_FACH measurements to enable   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050468 | 2672 | <del>                                     </del> | reception of MCCH MBMS message order on MCCH   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050468 |      |  | MSCH configuration information in case of soft combining Timing  | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050469 | 2674 | 1  | Offset Removal of fixed position for S-CCPCHs carrying MBMS channels   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050469 |      | ⊬  | Introduction of Band VII   | 6.6.0   | 6.7.0 |
|         | RP-29   | RP-050467 |      | <b>!</b>   | Introduction of Barid VII Introduction pre- configuration upon radio bearer establishment  |         |       |
|         | KP-29   | KP-050483 | 20/0 |  | introducing pre- configuration upon radio bearer establishment   | 6.6.0   | 6.7.0 |

|         | _     | _         | _    | _          | Change history   | _     | _     |
|---------|-------|-----------|------|------------|--|-------|-------|
| Date    | TSG # | TSG Doc.  | CR   | ٧          | Subject/Comment  | Old   | New   |
|         | RP-29 | RP-050484 |      | 1          | Introduction of the device type indication in UE capability                    | 6.6.0 | 6.7.0 |
|         | RP-29 | RP-050471 |      |            | E-DCH TTI Reconfiguration  | 6.6.0 | 6.7.0 |
|         | RP-29 | RP-050483 |      |            | Maximum number of reference ETFCI's  | 6.6.0 | 6.7.0 |
|         | RP-29 | RP-050561 | 2682 |            | F-DPCH power control   | 6.6.0 | 6.7.0 |
| 12/2005 | RP-30 | RP-050801 | 2617 | 2          | Introduction of UMTS1700   | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050787 | 2683 | 4          | Introduction of the HSDPA and E-DCH Capable Cell Indicator                     | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050785 | 2685 | 1          | PRACH for CCCH in SIB 6  | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050796 | 2686 | 1          | Tx/Rx frequency separation capability (FDD)                                    | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050827 | 2687 | 1          | E-DCH mobility corrections and multi-step handling for E-RGCH                  | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050797 | 2688 | 1          | L1 synchronisation at HHO  | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050786 |      |            | Correction to UE positioning measurements in CELL_PCH/URA_PCH state            | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050785 |      |            | Clarification of Delta in Inter/Intra-frequency measurement reporting criteria | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050785 |      |            | Clarification of the usage of "Ack-Nack Power Offset" in HSDPA for TDD         | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050785 |      |            | Modification of WB-AMR default configuration                                   | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050785 |      |            | Serving E-DCH radio link indication  | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050800 |      |            | Introduction of UMTS 900 (Band VIII)   | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050788 | 2700 |            | MCCH configuration information   | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050788 | 2701 |            | Correction of default TFCS for MBMS  | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050797 | 2702 |            | Unidirectional RLC reconfiguration   | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050793 | 2703 | 1          | Misalignments for E-DCH  | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050793 | 2704 |            | Update for E-DCH Serving Grant IE value range                                  | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050793 | 2705 |            | Clarification on MAC-d flow multiplexing list                                  | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050793 | 2706 |            | Addition of E-DCH power offsets to active set update                           | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050793 | 2707 |            | E-RNTI validity  | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050793 | 2708 |            | Clarification of bit strings for EUL   | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050793 | 2709 | 1          | Modification of SI periodicity   | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050793 | 2710 |            | E-DCH PO signalling  | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050793 | 2711 | 1          | MAC es/e reset indicator   | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050788 | 2714 | 1          | MBMS corrections on default TFCS, service identity and PL Service Information  | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050831 | 2717 | 1          | Corrections of inconsistencies in Rel-6 RRC messages (ASN.1 review)            | 6.7.0 | 6.8.0 |
|         | RP-30 | RP-050861 | 2718 | 1          | Introduction of Support of Handover to GAN                                     | 6.7.0 | 6.8.0 |
| 03/2006 | RP-31 | RP-060087 | 2716 | 5          | E-DCH Measurement Event 1J   | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060083 | 2720 | -          | Default configuration 11 for multirate AMR with SRB5                           | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060081 | 2722 | 1          | Addition of synchronization parameters in RRC for HS-SICH in 1.28Mcps TDD      | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060091 | 2723 | -          | Integrity Protection check for NAS messages                                    | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060087 | 2724 | -          | E-DCH radio link addition using ASU of RL already in DCH active set            | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060087 | 2725 | -          | Addition of SF128 and SF256 in E-DCH maximum channelisation codes              | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060087 | 2726 | 2          | RRC signaling efficiency changes for E-DCH                                     | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060087 | 2727 | -          | E-DCH HARQ Info signalling   | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060087 | 2728 | 1-         | Secondary Scrambling Code in F-DPCH RL information                             | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060087 | 2729 | 1-         | Correction to E-DCH IEs  | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060087 | 2730 | 1-         | Non-scheduled grant  | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060087 | 2731 | 1-         | IE handling for E-DCH  | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060087 | 2732 | 1-         | E-RNTI handling in Active Set Update procedure                                 | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060087 |      | 1-         | Editorial correction on "E-DCH information"                                    | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060120 |      | 1          | Corrections of inconsistencies in Rel-6 RRC messages (ASN.1 review)            | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060091 | 2735 | <u> </u>   | Correction to Modifying Integrity Protection Configuration for TM SRB          | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060091 | 2736 | <b>[</b> - | Correction to Security Mode Control Procedure                                  | 6.8.0 | 6.9.0 |
|         | RP-31 | RP-060091 |      | 1-         | Resolving problems from CR implementation                                      | 6.8.0 | 6.9.0 |

| D-1    | TCO " | TOO D       | 05   | In           | Change history  | 0     | 1     |
|--------|-------|-------------|------|--------------|---|-------|-------|
| Date   | TSG # | TSG Doc.    | CR   | Re<br>v      | Subject/Comment   | Old   | New   |
|        | RP-31 | RP-060093   | 2738 | -            | Removal of GPRS encryption algorithm info   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060092   | 2739 | 1            | Default configurations for Multi-mode AMR   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060091   | 2740 | -            | Periodic URA Update in OOS  | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060091   | 2741 | -            | Correction in IE UE positioning capability  | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060091   | 2742 | -            | F-DPCH, HSDPA and E-DCH in HANDOVER TO UTRAN<br>COMMAND (Rel-6 ASN.1 review issue 013)  | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060091   | 2743 | -            | Representation of IE "latestConfiguredCN-Domain" in the r3 branch of SRNS Relocation Info                                       | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060083   | 2746 | 1            | 7.95kbps NB AMR Default Configuration removal   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060091   | 2747 | <b> </b> -   | Periodic BMC Schedule Message   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060092   | 2748 | 1            | Introduction of additional Default configuration identities   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060095   | 2749 | 1            | PS default configurations   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060091   | 2751 | 1-           | Configuration of DL TFCS as 'Same as UL'  | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060091   |      | <del> </del> | NAS synchronization indicator in RB setup   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060088   |      | -            | General error handling in case of ASN.1 violation and for MBMS channels   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060091   | 2754 | -            | Clarification of UE action upon receiving the IE RB information to change list  | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060091   | 2755 | -            | Removal of unnecessary checking for HS-DSCH and E-DCH configuration   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060091   | 2756 | 1-           | Introduction of WB-AMR default configuration without SRB#5  | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060091   |      | 1-           | Initial DPCH frame offset for F-DPCH  | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060086   |      | 1            | Support for different E-DCH and HS-DSCH serving cells   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060088   |      | <del>l</del> | Correction to S-CCPCH power offset for MBMS   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060093   |      | <del> </del> | Inter-RAT PS Handover capability  | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060095   |      | <del> </del> | Indication of HSPA capability and conversation call type for CS   | 6.8.0 | 6.9.0 |
|        | RP-31 | RP-060097   |      | 3            | Enabling the Providing of Velocity  | 6.9.0 | 7.0.0 |
|        | RP-31 | RP-060096   |      | H            | Release 7 HS-DSCH operation without a DL DPCH for 1.28 Mcps   | 6.9.0 | 7.0.0 |
|        | 10.1  | 141 -000090 | 2730 |              | TDD – synchronisation and power control of UL DPCH via PLCCH  | 0.3.0 | 7.0.0 |
|        | RP-31 | RP-060098   | 2759 |              | 7.68 Mcps TDD Option (Release 7)  | 6.9.0 | 7.0.0 |
|        | RP-31 | RP-060099   | 2762 |              | Introduction of REL-7 access stratum release indicator  | 6.9.0 | 7.0.0 |
| 6/2006 | RP-32 | RP-060374   | 2769 | 1            | RoHC Segmentation, padding and Packet_sizes_allowed<br>parameter removal  | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060360   | 2772 | 1            | Corrections of procedures dealing with "Serving HS-DSCH radio link indicator" and "Serving E-DCH radio link indicator"          | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060361   | 2774 | 1            | MAC-HS handling for "return in case of failure"   | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060383   |      | 1            | "RB" terminology in security procedures   | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060368   |      | 1-           | Clarification on IE "MBMS re-acquire MCCH"  | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060368   |      | <b> </b> -   | Clarification on MCCH Acquisition Initiation  | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060368   |      | -            | Clarification of encoding of TB size for FDD common transport channels  | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060368   | 2784 | 1            | HCS parameters for MBMS cell reselection  | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060354   |      | ₽            | Clarification on MAC-e/es reset   | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060361   | 2788 | -            | Modification to the "BLER target"configuration method in RRC spec for 3.84Mcps TDD  | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060361   | 2790 | -            | Add some IEs regarding HS-SICH power control parameter updating in UPLINK PHYSICAL CHANNEL CONTROL message in 1.28Mcps TDD mode | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060364   | 2792 | <b> </b> -   | Corrections on Inter-RAT cell info indication   | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060364   | 2794 | ŀ            | Clarifications regarding virtual active set   | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060358   | 2796 | Ŀ            | PS Handover Capability  | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060364   |      | <u> </u>     | Handling of System Information Block type 5bis.   | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060364   | 2800 |              | Introducing container for Measurement Report informaton within SRNS relocation  | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060364   | 2802 | E            | Removal of GSM OTD reference cell   | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060364   | 2804 | -            | Error handling of 'dummy' IEs introduced in ASN.1 by recent feature removal   | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060365   | 2806 | 1-           | START value in Cell Update  | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060365   | 2808 | Ŀ            | Default configurations 10 and 13  | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060365   | 2810 | Ŀ            | Inter-frequency measurement reporting on RACH   | 7.0.0 | 7.1.0 |
|        | RP-32 | RP-060365   | 2812 | <b> </b> -   | Radio bearer mapping for SRBs   | 7.0.0 | 7.1.0 |

| Dot-    | TCO "          | TCO Dec                | CD   | р.               | Change history   | 01-1           | Name           |
|---------|----------------|------------------------|------|------------------|--|----------------|----------------|
| Date    | TSG #          | TSG Doc.               | CR   | Re<br>v          | Subject/Comment  | Old            | New            |
|         | RP-32          | RP-060365              | 2814 | 1                | Correction to RLC default configuration  | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060366              | 2816 | 1                | New standalone SRB default configuration   | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060366              | 2818 | 1                | Introduction of default configurations with 'flexible TFCS'                                    | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060366              | 2820 | ŀ                | Small IE corrections: "RB information to change list", "Access Class Barred"                   | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060366              | 2822 | -                | Correction to IE Default Configuration Identity  | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060366              |      | }                | Correction to TFC subset for default configurations 11&12                                      | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060366              | 2826 |                  | HSDPA/E-DCH info in INTER RAT HANDOVER INFO WITH INTER RAT CAPABILITIES                        | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060373              |      | 1                | Adding CS Call Type to Cell Update Message   | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060359              |      | <u></u> ፟፟፟፟፟፟፟፟ | Correct indication of Rel-7 tabular entries  | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060359              |      | #                | Corrections to REL-7 ASN.1   | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060362              |      | 1                | Measurement control ASN.1 error  | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060368              |      | #-               | Clarification on MBMS Radio Bearer Release   | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060354              |      | #                | Correction on E-DCH DL Scrambling Code   | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060366              |      | L                | Reinstatement of missing IE "Periodical reporting information-1b" in ASN.1                     | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060366              |      | #-               | SRB2 suspension  | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060369              |      | l                | Release 7 Timing Advance (3.84 Mpcs and 7.68 Mcps TDD)   | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060369              |      | 1                | Introduction of REL-7 access stratum release indicator   | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060369              |      | 1                | Positioning velocity ASN.1   | 7.0.0          | 7.1.0          |
|         | RP-32          | RP-060386              |      | 1                | Correction of positioning confidence reporting inconsistencies                                 | 7.0.0          | 7.1.0          |
| 9/2006  | RP-33          | RP-060573              |      | #                | Removal of CID indication in PDCP PID  | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060574              |      | #                | Correction to the tabulars for Serving Grant value   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060575              |      |                  | Range of the encoding of E-DCH physical layer category and HS-<br>DSCH physical layer category | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060574              |      | #-               | 3-index step 2-index step clarifications   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060597              |      | 2                | Introduction of SIB 11bis  | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060581              |      | 1                | Power class for UMTS2600 (VII) internal / 900 (VIII)   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060576              |      | 1                | Corrections to MBMS Downlink Timeslots and Codes for TDD                                       | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060576              |      | #                | Clarification on MBMS notification for UEs in CELL_DCH state                                   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060576              |      | #-               | Clarification on MBMS p-t-m activation time IE   | 7.1.0          | 7.2.0          |
|         | RP-33<br>RP-33 | RP-060576<br>RP-060575 |      | ┢                | Access probability factor  Modification to the HS-SCCH set configuration method in RRC         | 7.1.0<br>7.1.0 | 7.2.0<br>7.2.0 |
|         | RP-33          | RP-060575              | 2072 | -                | spec for 1.28Mcps TDD  Correction to tabular for IE "Delay restriction Flag"                   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060575<br>RP-060575 |      | ╂                | Corretion on 3G-2G Handover  | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060575              |      | ╂                |  | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060573              |      | ╂                | Pending security configuration for SRB2 UE radio access capability for Single-band UE          | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060593              |      | ╂                | Inter-RAT handover to UTRAN (HSPA)   | 7.1.0          |                |
|         | RP-33          | RP-060593              |      | ╂                | Tabular & reference corrections  | 7.1.0          | 7.2.0<br>7.2.0 |
|         | RP-33          | RP-060593              |      | ╂                | F-DPCH Tx Diversity  | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060593              |      | 1                | Expiration of RRC timer T314/T315 associated to CS/PS RABs                                     | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060583              |      | Ë                | Clarification on Exceeding Variance in Traffic Volume Measurement                              | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060573              | 2897 | 1                | Use of CM_PATTERN_ACTIVATION_ABORTED   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060573              |      | 1                | Corrections of procedures dealing with Hard Handover   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060585              |      | ŀ                | Correction to spreading factors used for 7.68 Mcps TDD PRACH                                   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060583              |      | 1-               | Corrections to ASN.1 (3.84 Mcps and 7.68 Mcps TDD)   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060586              |      | 1                | Introduction of 3.84 Mcps and 7.68 Mcps TDD E-DCH  | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060582              |      | 1                | Support of 2570 – 2620 MHz band for TDD  | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060593              |      | ŀ                | ASN1 correction on Inter-frequency RACH measurement reporting, backward compatible solution    | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060584              | 2908 | ▐                | CS Call type indication in CELL_FACH   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060584              |      | 1                | UE behaviour in RRC Connection Re-establishment scenarios                                      | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060624              |      | 2                | Enhancing MBMS support for Mobile TV   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060574              |      | 1-               | E-DCH gain factor computation  | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060593              | 2915 | 1-               | Correction to default configuration #22  | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060622              |      | 1                | Correction to coding of PLCCH for 1.28Mcps TDD   | 7.1.0          | 7.2.0          |
|         | RP-33          | RP-060578              |      | 1                | MAC-hs reset   | 7.1.0          | 7.2.0          |
| 12/2006 | RP-34          | RP-060722              | 2916 | 2                | UE based OTDOA positioning in WCDMA cells with extended range                                  | 7.2.0          | 7.3.0          |

| Doto   | TCC #          | TCC Dec                | CB   | D.          | Change history  | Old            | New   |
|--------|----------------|------------------------|------|-------------|---|----------------|-------|
| Date   | TSG #          | TSG Doc.               | CR   | v<br>v      | Subject/Comment   | Old            | New   |
|        | RP-34          | RP-060717              | 2922 | 1           | Correction on acceptable configurations for compression entities  | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060715              | 2923 | 1           | Introduction of Band X (Extended UMTS 1.7/2.1 GHz) in 25.331  | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060716              | 2925 | 1-          | Grant and MAC-e/es headers for E-DCH and References   | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060804              | 2927 | 2           | Correction to E-DCH reconfiguration   | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060718              | 2931 | ŀ           | Removal of MSCH configuration information from S-CCPCH system information   | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060718              | 2933 | 1           | Correction relating to the formation of a list of services  | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060718              | 2935 | 1-          | Indentation error in handling MBMS establishment cause values   | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060718              | 2936 | 1           | MSCH configuration information  | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060719              | 2938 | ŀ           | Tabular/ASN.1 mismatch for IE "UE radio access capability comp 2"   | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060716              |      | -           | Correction to Radio Bearer Mapping for UE in CELL_DCH state   | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060726              |      | 1           | State transition diagram from URA_PCH/Cell_PCH to idle  | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060719              |      | #-          | Usage of Band Indicator in Inter-RAT cell info list   | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060716              |      | #           | Correction for support of HS-DSCH in RRC Connection Setup   | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060720              |      | L           | Corrections related to 3.84 and 7.68 Mcps TDD E-DCH and the support of TDD at 2.6 GHz   | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060712              | 2948 | 1           | Introduction of the UE speed information at the CELL_DCH transition   | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060713              |      | 2           | Introduction of the new security algorithms UEA2 and UIA2.  | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060718              | 2951 | ŀ           | RAB ID for mobile TV  | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060718              | 2953 | ŀ           | MBMS PL Service Restriction Information and preferred frequency layer   | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060724              | 2954 | 2           | Introduction of inter-RAT DTM Handover  | 7.2.0          | 7.3.0 |
|        | RP-34          | RP-060718              |      | 1           | MBMS short transmission ID and Mobile TV  | 7.2.0          | 7.3.0 |
| 3/2007 | RP-35          | RP-070159              | 2957 | 2           | Deferred SIB11/12 reading and acting  | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070159              | 2958 | 1-          | UE Positioning Fine Time Assistance for GPS   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070159              | 2959 | 1           | Correction of "Threshold SFN-GPS TOW"   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070159              | 2960 | 1           | Correction to standalone UE positioning   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070159              | 2961 | -           | Clarification on introduction of the new security algorithms  | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070159              | 2962 | -           | Change to area scope of SIB1 value tag  | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070159              | 2963 | -           | Correction of the tabular description of the IE Downlink information for each radio link Post   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070159              | 2964 | 1-          | Removal of redundant ASN1 element DL-CCTrChTPCList  | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070151              | 2966 | 1-          | Correction of MBMS MODIFICATION REQUEST   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070151              | 2968 | ŀ           | Wording of MBMS PL Service Restriction Information and preferred frequency layer  | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070151              | 2970 | ╬           |   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070151              |      | 1           | MBMS selected services indication   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070151              |      | 1           | Correction of RAB release procedure for Mobile TV   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070153              |      | ľ           | Tabular Alignment for Uplink DPCH Info  | 7.3.0          | 7.4.0 |
|        | RP-35<br>RP-35 | RP-070151<br>RP-070154 | 2977 | 1           | Update the IE" RAB information to reconfigure" for Mobile TV Absence of MS Classmark 2 and 3 in IE "Inter-RAT UE radio access capability" | 7.3.0<br>7.3.0 | 7.4.0 |
|        | RP-35          | RP-070153              | 2981 | ╂           | Handling of TFCS with no DCH configured   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070163              | 41   | 1           | Introducing 64QAM downlink support  | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070157              |      | ╬           | Introduction of 1.28 Mcps TDD E-DCH   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070161              |      | 1           | Introducing MIMO in RRC specification   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070172              |      | ľ           | Alignment of Tabular with ASN.1   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070160              |      | ╠           | Corrections to Tabular for 3.84 and 7.68 McpsTDD E-DCH  | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070151              |      | 1           | MICH reception for services scheduled with MSCH   | 7.3.0          | 7.4.0 |
|        | RP-35          | RP-070158              |      | ľ           | Introduction of DTX-DRX and HS-SCCH less in RRC   | 7.3.0          | 7.4.0 |
| 6/2007 | RP-36          | RP-070402              |      | 6           | Introducing 16QAM uplink support  | 7.4.0          | 7.5.0 |
|        | RP-36          | RP-070407              |      | 1           | Use of Integrity protection algorithm UIA/2: removal of a 'shall' in a note   | 7.4.0          | 7.5.0 |
|        | RP-36          | RP-070407              | 2993 | 1           | RRC Cellid encoding alignment on RANAP  | 7.4.0          | 7.5.0 |
|        | RP-36          | RP-070407              |      | 1           | Signalling connection release at T314/315 expiry  | 7.4.0          | 7.5.0 |
|        | RP-36          | RP-070408              |      | $\parallel$ | Cell Update Confirm with RLC re-establish indicator   | 7.4.0          | 7.5.0 |
|        | RP-36          | RP-070408              |      | 1           | Correction of STTD Indicator for F-DPCH Tx Diversity  | 7.4.0          | 7.5.0 |
|        | RP-36          | RP-070395              | 41   | 1           | Introduction of GAN PS handover   | 7.4.0          | 7.5.0 |
|        | RP-36          | RP-070408              |      | 1           | Feature Clean Up leftover: Removal of DRAC leftover   | 7.4.0          | 7.5.0 |
|        | RP-36          | RP-070408              |      |             | '   | 7.4.0          | 7.5.0 |

| Date   | TSG#   | TSG Doc.   | CR   | Re | Change history Subject/Comment  | Old   | New            |
|--------|--------|------------|------|----|---|-------|----------------|
| Jaic   | 100 #  | 100 000.   |      | v  | oubject comment   | l     | INCW           |
|        | RP-36  | RP-070408  | 3000 |    | PLMN selection ping-pong control  | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070408  | 3001 |    | Optimization of switching beteween MBMS broadcast TV channels             | 7.4.0 | 7.5.0          |
|        |        |            |      | 4  | transmitted on ptp bearers (MBMS for Mobile TV)                           |       |                |
|        | RP-36  | RP-070408  |      |    | Alignment of tabular to ASN.1 for SIB11/SIB12 and event 1J                | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070403  | 3003 | 2  | Introduction of HS-DSCH reception in CELL_FACH, URA_PCH                   | 7.4.0 | 7.5.0          |
|        | DD 20  | DD 070400  | 2004 |    | and CELL_PCH  | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070408  |      | 1  | Introduction two DRX schemes in URA_PCH and CELL_PCH                      | 7.4.0 | 7.5.0<br>7.5.0 |
|        | RP-36  | RP-070416  |      | -  | Maintenance of PMM connection for MBMS PTP reception                      | 7.4.0 |                |
|        | RP-36  | RP-070401  |      | -  | Content of MSI message when sent on DCCH                                  | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070401  | 3012 |    | Relative ordering of MBMS Selected Services when indicated to the network | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070416  | 2012 |    | Background scan during MBMS PTM reception                                 | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070410  |      | 1  | Default MBMS activation time and 'MBMS all unmodified p-t-m               | 7.4.0 | 7.5.0          |
|        | KF-30  | KF-070401  | 3013 |    | services'   | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070401  | 3017 | 1  | Problem with the IE 'MBMS service identity' included in the IE            | 7.4.0 | 7.5.0          |
|        |        | 676.61     |      |    | 'RAB info'  |       | 1.0.0          |
|        | RP-36  | RP-070406  | 3019 | 1  | Correction of SRB delay   | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070406  |      | 1  | Incorrect reference to 25.993 for default configuration 17                | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070416  |      | 1  | Removal of redundant IE 'MBMS-PreferredFreqRequest-r6'                    | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070406  |      | 1  | Correction to CTFC for default configuration 12                           | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070404  |      | 1  | Introduction of Improved L2 support for high data rates                   | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070400  |      | 1  | MBMS TDD and FDD Physical Layer Improvements                              | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070408  |      | 1  | Introduction of Wait time to Cell Update Confirm                          | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070415  |      | 1  | Removing the limitation of SRNC identity size                             | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070408  |      | 1  | Using special value of HE field to indicate end of an SDU for RLC         | 7.4.0 | 7.5.0          |
|        |        |            |      |    | AM  |       |                |
|        | RP-36  | RP-070408  | 3030 | 1  | T305 timer in RRC container at SRNS relocation                            | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070408  | 3031 |    | Support for signalling of F-DPCH slot formats                             | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070398  | 3032 | 1  | A-GNSS in UTRAN (RRC)   | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070397  | 3034 |    | Addition of E-DCH Scheduling Information Power Offset in TDD              | 7.4.0 | 7.5.0          |
|        |        |            |      |    | mode  |       |                |
|        | RP-36  | RP-070397  | 3035 | 1  | Corrections to tabular for non-scheduled transmission for LCR             | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070397  | 3036 | 1  | Introduction of PRACH configuration in messages triggering E-             | 7.4.0 | 7.5.0          |
|        | 111 00 | 141 070007 | 0000 |    | DCH serving cell change in LCR TDD mode                                   | 7.4.0 | 7.0.0          |
|        | RP-36  | RP-070417  | 3037 |    | Correction to definition of maxNumE-AGCH for TDD                          | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070394  | 3038 |    | Correction to definition of Power Resource Related Information            | 7.4.0 | 7.5.0          |
|        |        |            |      |    | (TDD only)  |       |                |
|        | RP-36  | RP-070401  | 3039 |    | MBMS Scheduling Information   | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070401  | 3040 |    | MBMS Notification   | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070401  | 3041 |    | Minor correction on text  | 7.4.0 | 7.5.0          |
|        | RP-36  | RP-070504  | 3043 | 2  | Indication for F-DPCH support status                                      | 7.4.0 | 7.5.0          |
| 9/2007 | RP-37  | RP-070623  | 3047 | 1  | Correction to E-DCH STTD operation  | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070625  | 3048 | 1  | Requirement on MICH reading   | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070624  | 3050 |    | START values in cell update before security is enabled                    | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070671  | 3053 | 1  | Clarification on Enhanced CELL_FACH State                                 | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070671  |      | 1  | Correction of UTRAN MOBILITY INFORMATION extension                        | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070626  |      | 1  | Lossless reconfiguration between fixed and flexible RLC PDU size          | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070630  |      | 1  | Restriction on the number of MIMO processes                               | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070670  |      | 1  | Correction on 16 QAM Category   | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070632  |      | 1  | Correction to MBSFN TDM   | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070631  |      | 1  | Corrections to Tabular (alignment with ASN.1)                             | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070631  |      | 1  | CR implementation issues 25.331 v7.4.0 (2007-03)                          | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070636  |      | 1  | Incomplete exception description in UE-based OTDOA                        | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070636  |      |    | Correction of inconsistency in 25.331 related to UE-sending of            | 7.5.0 | 7.6.0          |
|        | DD 07  | DD 070005  | 2004 |    | capabilities  | 7.5.0 | 7 0 0          |
|        | RP-37  | RP-070625  |      | 1  | MBMS Counting completion in RRC   | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070625  |      | 1  | MBMS ptp service change   | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070623  |      | 1  | Clarification on logical channel multiplexing                             | 7.5.0 | 7.6.0          |
|        | RP-37  | RP-070625  | 3072 |    | Integrity Protection and MBMS: Correction to Procedural Text              | 7.5.0 | 7.6.0          |
|        |        |            | 3074 | 1  | (alignment with ASN.1) MBMS services naming                               |       | 7.6.0          |

| Data   | TCC # | TCC Das   | CD   | n-      | Change history   | 014   | Name  |
|--------|-------|-----------|------|---------|--|-------|-------|
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|        | RP-37 | RP-070671 | 3077 |         | Removal of RRC padding on BCCH and PCCH carried on HS-<br>DSCH   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070671 | 3078 |         | Periodic MAC-ehs reset   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070671 | 3079 |         | Correction to UE behavior to disable HS-DSCH operation when HS-DSCH reception is unavailable             | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070671 | 3080 |         | procedure  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070671 | 3081 |         | Additional cases of MAC-ehs reset for UEs operating in Enhanced CELL_FACH                                | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070634 | 3082 | 2       | UE Capabilities for Rel-7, with 'improved L2' optional   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070627 | 3083 |         | Correction to CPC UL DTX for addition of a new cell in the active set.                                   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070627 | 3084 | 1       | Handling of DPCCH Slot Format 4  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070627 | 3085 |         | Correction to the related IEs of DTX-DRX operation in RRC  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070627 | 3086 | 1       | Restriction of HS-SCCH less operation and MIMO   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070627 | 3087 | 1       | HS-SCCH less virtual IR buffer size  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070629 | 3088 | 1       | Timing Advance Corrections for 3.84/7.68 Mcps TDD E-DCH  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070631 | 3089 |         | 3.84/7.68 Mcps TDD EDCH Sending Scheduling Information Periodically                                      | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070670 | 3090 |         | Correction on 64QAM and MIMO UE capability in RRC  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070670 | 3092 | 1       | Starting and stopping operation in 16QAM mode  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070623 | 3093 | 1       | The range of E-TFCI_ed,switch  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070650 | 3094 | L       | Introduction of multi-frequency operation for LCR TDD  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070624 | 3096 |         | F-DPCH TPC error rate target   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070624 | 3098 |         | Correction to CTFC for default configuration 14  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070624 | 3100 |         | Correction to default configuration 16   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070624 | 3102 |         | Security correction on PS handover to UTRAN  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070626 | 3103 |         | IE Common RB mapping info  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070626 | 3104 |         | Common-MAC-ehs-ReorderingQueues  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070627 | 3105 | 2       | Correction to CPC Parameters   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070632 | 3107 |         | Change Request for 25.331 ASN.1 for MBMS TDD and FDD<br>Physical Layer Improvements                      | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070628 | 3108 |         | Update of GANSS elements improving GANSS ambiguity resolution  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070636 | 3109 |         | Corrections to DRX schemes in URA_PCH and CELL_PCH   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070636 | 3112 |         | Clarification on reconfiguration of T305   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070628 | 3113 |         | Introduction of SIB type extension for SIB type 15.8   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070636 | 3114 |         | Correction for configuration of RFC2507 header compression   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070636 | 3115 |         | Correction for CS call type  | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070636 | 3116 |         | Add the frequency infor to identify the neighbour cells when report the OTDOA measurement results        | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070624 | 3120 | 1       | Corrections in the default radio configurations 11/12/13   | 7.5.0 | 7.6.0 |
|        | RP-37 | RP-070624 |      |         | Miscellaneous corrections in the default radio configurations  | 7.5.0 | 7.6.0 |
| 2/2007 | RP-38 | RP-071011 |      | 2       | UE setting for the "Extension indicator" in the frequency band IEs                                       | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070898 |      | -       | Correction to Measurement Report Initiation Procedure with UEs in CELL_PCH                               | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070899 | 3134 | -       | START value and reconfiguration from fixed to flexible   | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070900 | 3136 | -       | UE DTX capability in RRC Connection Request  | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070903 | 3140 | 1       | Introduction of an additional UE category for 1.28Mcps TDD E-<br>DCH                                     | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070905 | 3142 | 2       | UE Waiting during Cell Update Procedure  | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070905 | 3144 | 1       | Correction for radio bearer mapping for FDD  | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070903 | 3146 | -       | Add E-RUCCH SYNC-UL info for handover procedure for LCR TDD  | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070895 | 3150 | -       | Correction on MMSI reception on DCCH   | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070894 | 3153 | 2       | RADIO BEARER SETUP using default configurations  | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070895 | 3156 | -       | Correction of integrity protection and checking of MBMS<br>MODIFIED SERVICES INFORMATION message on DCCH | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070892 | 3161 | -       | Use of default configuration 12  | 7.6.0 | 7.7.0 |
|        | RP-38 | RP-070903 |      | -       | A Correction about SNPL for 1.28 Mcps TDD  | 7.6.0 | 7.7.0 |
|        |       |           |      |         | · ·  |       |       |
|        | RP-38 | RP-070903 | 3165 | -       | Support of SRB transmission on HSPA for 1.28Mcps TDD   | 7.6.0 | 7.7.0 |

|      | Change history |           |      |         |  |       |       |  |  |
|------|----------------|-----------|------|---------|--|-------|-------|--|--|
| Date | TSG #          | TSG Doc.  | CR   | Re<br>v | Subject/Comment  | Old   | New   |  |  |
|      | RP-38          | RP-070903 | 3170 | -       | Clarification of gain factor Beta-e in LCR TDD EUL                                       | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070898 | 3172 | 2       | lur backward compatibility problem   | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070898 | 3174 | -       | BCCH reception on HS-DSCH for CELL_PCH UE  | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070898 | 3176 | -       | Cell_PCH UE behaviour upon reception of activation time in reconfiguration message       | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070899 | 3178 | -       | CQI Table usage  | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070938 | 3180 | -       | Scheduled Grant setting in DTX Cycle 2 during CPC operation                              | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070894 | 3183 | -       | Wrong UL Puncturing Limits for default configurations #15, #18, #19, #20 and #21         | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070906 | 3185 | 1       | Change of UE capability during an RRC connection   | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070901 | 3187 | =.      | Correction to HS-SCCH numbering assumption for 64QAM encoding                            | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070905 | 3189 | -       | Clarification that "Default DPCH offset value" is required for FACH->DCH reconfiguration | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070895 | 3191 | -       | Error in Rel-7 shadow CR concerning MBMS preferred frequency information                 | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070905 | 3195 | -       | Correction to Control Information transmission with two logical channels                 | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070905 | 3197 | -       | Some editorial corrections on Multi-carriers for LCR TDD                                 | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070895 | 3200 | -       | Procedure text concerning MBMS offsets and tabular/ASN.1 description are not aligned     | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070905 | 3202 | 1       | MBMS Common Physical Channels limitation   | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070895 | 3205 | 1       | Correction on MBMS Frequency Layer Dispersion (FLD)                                      | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070897 | 3207 | 1       | Replacement of the almanac Sat Mask by SV ID   | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070911 | 3209 | -       | Clarification on E-DPDCH power extrapolation/interpolation                               | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070895 | 3211 | -       | BCCH / MCCH consistency for MBMS reception   | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070910 | 3213 | -       | Introduction of CS voice over HSPA   | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070905 | 3216 | -       | Disable reselection to the original RAT when UE receives RRC CONNECTION REJECT           | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070904 | 3218 | -       | Corrections due to the ASN.1 R7 review (main CR)   | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070904 | 3220 | -       | Signalling of Rel-7 UE capabilities (ASN.1 R7 review)                                    | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070912 | 3222 | -       | Augmentation of GANSS Signal ID field  | 7.6.0 | 7.7.0 |  |  |
|      | RP-38          | RP-070905 | 3224 | -       | Delta T2TP Parameter   | 7.6.0 | 7.7.0 |  |  |

|            |                | 1-0                    |       | 1-      | Change history   | a              | 1              |
|------------|----------------|------------------------|-------|---------|--|----------------|----------------|
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| 03/2008    | RP-39          | RP-080178              | 3230  | -       | Clarification on MAX_CID   | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080189              | 3232  | 1-      | FACH measurement occasion Calculation  | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080189              | 3234  | -       | Clarification on "Default DPCH offset value"   | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080189              | 3236  | -       | Synchronised modification of system information blocks   | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080189              | 3238  | -       | Clarification on "Measured Results on RACH" in enhanced CELL_FACH  | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080186              |       | -       | Correction to conditions for setting MIMO_STATUS variable  | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080188              |       | -       | Correction to HS-SCCH numbering assumption for 64QAM encoding  | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080181              | 3244  | -       | Use of cell selection and reslection info in the case that a cell is providing MBSFN only service  | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080191              |       | -       | Corrections due to the RRC Rel-7 ASN.1 review  | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080177              |       | -       | L2-combining in MBMS CURRENT CELL P-T-M RB INFORMATION message   | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080189              |       | -       | Traffic volum measurement for CELL_PCH UE  | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080190              |       | -       | Support of octet aligned HS-DSCH transport block sizes for non-64QAM   | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080186              |       | 1       | Correction to MIMO with the message PHYSICAL CHANNEL RECONFIGURATION   | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080182              |       | -       | Supporting multi-frequency for 1.28 Mcps TDD MBMS  | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080185              |       | -       | Modification of variable E_DCH_TRANSMISSION setting  | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080185              |       | -       | Correction and Clarification of non-scheduled E-PUCH allocation for LCR TDD  | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080185              |       | -       | Modifications on the values of T-RUCCH timer for LCR TDD   | 7.7.0          | 7.8.0          |
|            | RP-39          | RP-080184              |       | -       | Persistence scaling values for 3.84/7.68 Mcps TDD E-DCH  | 7.7.0          | 7.8.0          |
| E /0 2 2 - | RP-39          | RP-080178              |       | -       | Correction to default configuration 17   | 7.7.0          | 7.8.0          |
| )5/2008    | RP-40          | RP-080390              |       | 1       | Interpretation of the "Neighbouring cell identity" in MBMS NEIGHBOURING CELL PTM RB INFO   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080390              |       | -       | Clarification on MBMS dispersion   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080403              |       | -       | Minor ASN.1 corrections due errors detected during v780 implementation   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080396              |       | -       | Correction on the attribute of Treset in system information  | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080396              |       | -       | Editorial correction to reconfigure MAC-ehs reordering queue   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080403              |       | -       | Editorial correction to variable description of CELL_INFO_LIST   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080393              |       | -       | Correction to the calcuration of DPCH frame offset for F-DPCH on timing re-initialised hard handover   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080403              |       | -       | Handling of TRANSPORT FORMAT COMBINATION CONTROL   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080404              |       | -       | Completion of the mechanism for Scheduling Information transmission on MAC-e PDU alone for 1.28 Mcps TDD in EUL                              | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080443              |       | 1       | Counter and timers for Scheduling Information Reporting of LCR TDD   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080398              |       | -       | Clarification of the definition of PRRI for TDD  | 7.8.0          | 7.9.0          |
|            | RP-40<br>RP-40 | RP-080400<br>RP-080395 |       | 1       | Correction and Clarification of E-RUCCH Info for LCR TDD  Re-establishment condition for RLC reconfiguration to fixed from flexible PDU size | 7.8.0<br>7.8.0 | 7.9.0<br>7.9.0 |
|            | RP-40          | RP-080402              | 3314  | -       | MBSFN Corrections  | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080403              |       | -       | Correction of missing Rel-7 VLEC in the Radio Bearer Reconfiguration message   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080396              | 3320  | 1-      | RRC connection release for Cell_PCH  | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080396              |       | 1-      | Correction of CELL_PCH in Reconfiguration Procedure  | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080401              |       | †-      | Extended power control gap for E-PUCH in LCR TDD   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080300              | 3331  | 1-      | GANSS corrections  | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080403              |       | 1-      | Various ASN.1 corrections  | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080403              |       | 1-      | Uncorrect way to delete MAC-ehs re-ordering queue  | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080442              |       | 1-      | Correction to note on reference E-TFCI configuration   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080394              |       | -       | Correction to relation between DTX-DRX timing and DTX-DRX configuration  | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080400              | 3343  | 1       | Clarification on Number of E-UCCH for LCR TDD  | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080400              |       | 1       | Presence clarification of E-HICH Information per radio link for TDD  | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080400              |       | -       | Correction on the non-scheduled E-PUCH configuration   | 7.8.0          | 7.9.0          |
|            | RP-40          | RP-080394              |       | 1_      | Correction to signaling of Uplink DPCCH slot format information  | 7.8.0          | 7.9.0          |
|            | 111 -40        | 111 000007             | 000 . |         | Corrodion to dignaling of opinite by corrolocionnat information  | 7.0.0          |                |

|         |       | -         | -    |            | Change history  |        |        |
|---------|-------|-----------|------|------------|---|--------|--------|
| Date    | TSG # | TSG Doc.  | CR   | Re<br>v    | Subject/Comment   | Old    | New    |
| 08/2008 | -     | -         | -    | -          | Fix Word problem  | 7.9.0  | 7.9.1  |
| 09/2008 | RP-41 | RP-080681 | 3357 | -          | Correct the description of UE behaviour during HS-DSCH Reception in CELL_PCH and URA_PCH  | 7.9.1  | 7.10.0 |
|         | RP-41 | RP-080679 | 3359 | -          | Correction on the non-scheduled E-PUCH configuration for 1.28Mcps TDD   | 7.9.1  | 7.10.0 |
|         | RP-41 | RP-080680 | 3361 | 2          | MBSFN Corrections   | 7.9.1  | 7.10.0 |
|         | RP-41 | RP-080681 | 3364 | -          | Deletion of Duplicate Definition of CELL_FACH HS-DSCH<br>Variables  | 7.9.1  | 7.10.0 |
|         | RP-41 | RP-080684 | 3366 | -          | Modification of GANSS timing representation to avoid large integers   | 7.9.1  | 7.10.0 |
|         | RP-41 | RP-080678 | 3375 | -          | Clarification of the UE behavior on DSAC  | 7.9.1  | 7.10.0 |
|         | RP-41 | RP-080685 | 3385 | 2          | Reconfiguration of inactive RABs to DCH   | 7.9.1  | 7.10.0 |
|         | RP-41 | RP-080682 | 3388 | -          | Correction to MIMO parameters   | 7.9.1  | 7.10.0 |
|         | RP-41 | RP-080679 | 3390 | -          | Perstistence value (Pi) completion for E-RUCCH in LCR TDD   | 7.9.1  | 7.10.0 |
|         | RP-41 | RP-080679 | 3394 | -          | Introduce E-DCH Traffic volume measurement for LCR TDD  | 7.9.1  | 7.10.0 |
|         | RP-41 | RP-080685 | 3396 | -          | Introduce QrxlevminOffset in 25.331 for TDD   | 7.9.1  | 7.10.0 |
|         | RP-41 | RP-080679 | 3399 | 1          | Correction of E-RUCCH configuration for LCR TDD EUL   | 7.9.1  | 7.10.0 |
| 12/2008 | RP-42 | RP-080999 | 3418 | -          | Typo in IE 'Domain Specific Access Restriction'   | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081005 | 3420 | 1-         | Misplaced IEs in RADIO BEARER RECONFIGURATION   | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081004 | 3423 | 1          | Reseting the periodic cell update timer T305 after autonomous state transition to CELL_FACH in Enhanced CELL_FACH                 | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081003 | 3429 | 1          | Clarification to the scope of Uplink DPCCH slot format 4 feature  | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081007 | 3431 | -          | Introduce Intra-SecondaryFrequency Indicator for LCR TDD  | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081004 | 3434 | 2          | correct the description of UE behaviour during HS-DSCH Reception in CELL_PCH  | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081003 | 3437 | -          | Modification of the conditions for disabling HS-SCCH less operation   | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081005 | 3443 | -          | Corrections related to the cell update wait timer T320  | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081000 | 3465 | 1          | MBMS frequency selection  | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081003 | 3467 | -          | Correction to DRX and CQI reporting   | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081003 | 3477 | -          | Clarification to the use of 'F-DPCH slot format' IE   | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081005 | 3488 | -          | Correction to IDT procedure   | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081006 | 3491 | -          | Clarification for 16QAM UL E-AGCH table mapping   | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-080998 | 3498 | -          | Correction of measurement event 1I  | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081007 | 3500 | -          | Clarification of Persistence Value (Pi) for E-RUCCH in LCR TDD  | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081005 | 3508 | -          | Correction to "DL RLC PDU size" explicit configuration to prevent security issue  | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081003 | 3510 | -          | Clarification to the use of 'DTX-DRX timing information' for hard handover  | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081005 | 3513 | 1          | Correction of measurement event 1H  | 7.10.0 | 7.11.0 |
|         | RP-42 | RP-081005 | 3517 | -          | Support of Enhanced F-DPCH in RRC CONNECTION REQUEST  | 7.10.0 | 7.11.0 |
| 02/2009 | RP-43 | RP-090115 | 3534 | 1          | UMTS frequency information in IE "RpImn information"  | 7.11.0 | 7.12.0 |
|         | RP-43 | RP-090115 | 3537 | -          | CN system information after PS HO   | 7.11.0 | 7.12.0 |
|         | RP-43 | RP-090119 | 3539 | -          | Correction to the UE behaviour when entering URA_PCH state  | 7.11.0 | 7.12.0 |
|         | RP-43 | RP-090117 | 3541 | 1          | Condition to set the 'Security capability indication' flag  | 7.11.0 | 7.12.0 |
|         | RP-43 | RP-090117 | 3543 | 2          | Ciphering for intra-UTRAN Radio Bearer Setup - Rel 7  | 7.11.0 | 7.12.0 |
|         | RP-43 | RP-090118 | 3568 | -          | Clarification of scope of signaled transport block sizes for HS-<br>SCCH less operation   | 7.11.0 | 7.12.0 |
|         | RP-43 | RP-090117 | 3574 | <u> </u>   | 25.331 Rel 7 CR UE restrictions on E-TFCI   | 7.11.0 |        |
|         | RP-43 | RP-090115 |      | -          | Correction to handling of CELL_INFO_LIST when 'Inter-frequency cell info list' is received in System Information Block Type 11bis | 7.11.0 | 7.12.0 |
|         | RP-43 | RP-090115 | 3582 | 1-         | Corrections for PS handover to UTRAN  | 7.11.0 | 7.12.0 |
|         | RP-43 | RP-090121 | 3584 | 1          | Correction to RRC handling of AG and SG tables when 16QAM UL is configured  | 7.11.0 | 7.12.0 |
|         | RP-43 | RP-090118 | 3586 | 1          | Correction to handling of DTX-DRX information   | 7.11.0 | 7.12.0 |
|         | RP-43 | RP-090122 | 3616 | 1          | Clarification of 64QAM TB Table applicability   | 7.11.0 | 7.12.0 |
|         | RP-43 | RP-090117 | 3621 | <u> </u> - | Adding the MBMS PTM RB release cause in the MCCH message when releasing the MBMS service for 1.28Mcps TDD                         | 7.11.0 |        |
| 04/2009 | -     | -         | -    | -          | Problem of delay in opening the specification was solved. No contents change.   | 7.12.0 |        |
| 06/2009 | RP-44 | RP-090498 | 3628 | 1          | Removal of description of CPCH feature  | 7.12.1 |        |
|         | RP-44 | RP-090505 | 3630 | 1          | Error in UE capability update procedure   | 7.12.1 | 7.13.0 |

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|         | RP-44 | RP-090505  |      | 1       | Correction on deferredMeasurementControlReading   |        | 7.13.0 |
|         | RP-44 | RP-090500  | 3634 | -       | Clarification for setting the HS_SCCH_LESS_STATUS variable  | 7.12.1 | 7.13.0 |
|         | RP-44 | RP-090505  |      | -       | Correction on UE Mobility State Indicator   |        | 7.13.0 |
|         | RP-44 | RP-090500  |      | -       | Correction to CPC activation/deactivation   |        | 7.13.0 |
|         | RP-44 | RP-090606  | 3655 | 3       | Specification of CPC restored state upon physical layer failure   | 7.12.1 | 7.13.0 |
|         | RP-44 | RP-090501  |      | 2       | Correction to non-scheduled transmission for 1.28 Mcps TDD  | 7.12.1 | 7.13.0 |
|         | RP-44 | RP-090503  | 3659 | -       | Clarification of CQI reporting for 1.28Mcps TDD   | 7.12.1 | 7.13.0 |
|         | RP-44 | RP-090503  | 3661 | -       | Correction to Improved L2 support for high data rates for TDD   | 7.12.1 | 7.13.0 |
|         | RP-44 | RP-090499  | 3670 | -       | Clarification to the support of 2 different layer 3 filters per measurement type  | 7.12.1 | 7.13.0 |
|         | RP-44 | RP-090505  | 3672 | 1       | Clarification to handling of IE "Use special value of HE field"   |        | 7.13.0 |
|         | RP-44 | RP-090500  |      | -       | Removal of slot format 3 from IE "Uplink DPCCH slot format information" in "DTX-DRX information"  |        | 7.13.0 |
|         | RP-44 | RP-090504  |      | -       | Correction to Enhanced CELL_FACH Capability   | 7.12.1 | 7.13.0 |
|         | RP-44 | RP-090500  | 3689 | 1       | Corrections to CPC when E-DCH TTI is reconfigured   | 7.12.1 | 7.13.0 |
|         | RP-44 | RP-090505  | 3691 | 2       | Call Type Inclusion condition   | 7.12.1 | 7.13.0 |
|         | RP-44 | RP-090502  | 3696 | -       | Correction on p-t-m bearer release in MBSFN   | 7.12.1 | 7.13.0 |
| 09/2009 | RP-45 | RP-090901  | 3703 | -       | Missing RRC messages in RRC procedure performance values section  | 7.13.0 | 7.14.0 |
|         | RP-45 | RP-090905  | 3707 | -       | Correction to HS-SCCH less operation (Rel-7)  | 7.13.0 | 7.14.0 |
|         | RP-45 | RP-090908  | 3716 | 1       | E-DCH TTI restriction for 16QAM   | 7.13.0 | 7.14.0 |
|         | RP-45 | RP-090902  | 3724 | -       | Making feature "Using special value of HE field to indicate end of<br>an SDU for RLC AM" optional and octet aligned HS-DSCH<br>transport block table optional for non-64QAM UEs | 7.13.0 | 7.14.0 |
|         | RP-45 | RP-090901  | 3748 | -       | Clarification of multi-frequency info for 1.28Mcps TDD  | 7.13.0 | 7.14.0 |
|         | RP-45 | RP-090904  | 3753 | -       | Correction to the description of MIMO parameters  | 7.13.0 | 7.14.0 |
|         | RP-45 | RP-090902  | 3758 | -       | Making features "F-DPCH" and "Introduction of Wait time to Cell Update Confirm" optional  | 7.13.0 | 7.14.0 |
|         | RP-45 | RP-090898  | 3763 | 2       | Making features "Two DRX schemes in URA_PCH and CELL_PCH" and "E-DPDCH power interpolation formula" optional  | 7.13.0 | 7.14.0 |
|         | RP-45 | RP-090897  |      | 1       | CS voice over HSPA UE capability in RRC CONNECTION REQUEST  | 7.13.0 |        |
|         | RP-45 | RP-090903  |      | -       | Clarification on the Power Resource Related Information of 1.28Mcps TDD   | 7.13.0 |        |
|         | RP-45 | RP-090903  |      | -       | Clarification on the configuration of T-SI-NST for 1.28Mcps TDD   | 7.13.0 | 7.14.0 |
|         | RP-45 | RP-090900  | 3802 | -       | Clarification on Inter-frequency RACH reporting quantity for TDD  | 7.13.0 |        |
|         | RP-45 | RP-090900  | 3806 | -       | E-AGCH channel and E_RNTI variable corrections  | 7.13.0 |        |
|         | RP-45 | RP-090901  | 3812 | -       | Enhancing the Category Handling in UMTS   | 7.13.0 | 7.14.0 |
|         | RP-45 | RP-090902  | 3815 | -       | Making the bit of feature "UEA2/UIA2" reformulated  | 7.13.0 | 7.14.0 |
|         | RP-45 | RP-090900  | 3817 | -       | RLC Size - SizeInfoType2 correction   | 7.13.0 | 7.14.0 |
| 12/2009 | RP-46 | RP-091307  | 3818 | -       | Adding missing reference for HS_SCCH_LESS_STATUS variable   | 7.14.0 | 7.15.0 |
|         | RP-46 | RP-091306  | 3822 | -       | Clarification on deferred measurement control reading   | 7.14.0 | 7.15.0 |
|         | RP-46 | RP-091310  | 3832 | 1       | Clarification of Power Offset for Scheduling Info for 1.28Mcps TDD (change 1)   | 7.14.0 | 7.15.0 |
|         | RP-46 | RP-091312  | 3854 | 1       | MAC-es/e reset when 16QAM operation starts or stops(REL-7)  | 7.14.0 | 7.15.0 |
|         | RP-46 | RP-091306  |      | -       | Corrections to the Frequency quality estimate in 1.28Mcps TDD   | 7.14.0 | 7.15.0 |
|         | RP-46 | RP-091305  |      | 1       | UE behaviour upon a removal of the serving HS-DSCH/E-DCH radio link   | 7.14.0 | 7.15.0 |
|         | RP-46 | RP-091305  | 3881 | -       | Maximum Power Reduction (MPR) and event 6D reporting  | 7.14.0 | 7.15.0 |
|         | RP-46 | RP-091308  | 3884 | 1       | RRC Signaling of S-CPICH power offset for MIMO UEs  | 7.14.0 | 7.15.0 |
|         | RP-46 | RP-091306  | 3918 | 2       | Modification of inter RAT handover info for 1.28 Mcps TDD   | 7.14.0 | 7.15.0 |
|         | RP-46 | RP-091308  | 3945 | 1       | Optional support of Tx diversity on DL control channels for MIMO capable UEs  | 7.14.0 | 7.15.0 |
|         | RP-46 | RP-091306  | 3984 | 1       | Correction to the reference in section 14.9.2   | 7.14.0 | 7.15.0 |
| 03/2010 | RP-47 | RP-100199  | 4008 | 1       | Indication of MIMO codebook restriction   | 7.15.0 | 7.16.0 |
|         | RP-47 | RP-100284  |      | -       | Traffic volume measurement in CELL_PCH state  | 7.15.0 |        |
|         | RP-47 | RP-100284  |      | 1       | Corrections to HS-DSCH reception in CELL-PCH and CELL-FACH  |        |        |
|         | RP-47 | RP-100283  |      | 1       | ·   | 7.15.0 |        |
| 06/2010 | RP-48 | RP-100532  |      | 1-      | Handling of RRC Unrecoverable Error in Enhanced CELL_FACH   | 7.16.0 |        |
|         | RP-48 | RP-100534  |      | -       | Clarification on UE radio access capability in ASN1 for LCR TDD   | 7.16.0 |        |
|         | RP-48 | RP-100532  |      | -       | Clarification on the HS-DSCH reception in enhanced CELL_FACH  | 7.16.0 |        |
|         | 1     | 1.1 100002 | 100  | 1       | J.S Gallon on the Door Hoodphon in Childhood OLLL_I AOI   | 1 0.0  | 1      |

|         | Change history |           |      |         |  |        |        |  |  |
|---------|----------------|-----------|------|---------|--|--------|--------|--|--|
| Date    | TSG #          | TSG Doc.  | CR   | Re<br>v | Subject/Comment  | Old    | New    |  |  |
|         |                |           |      |         | state  |        |        |  |  |
|         | RP-48          | RP-100532 | 4184 | -       | Clarification on the traffic volume measurement in CELL_PCH state  | 7.16.0 | 7.17.0 |  |  |
| 09/2010 | RP-49          | RP-100844 | 4191 | -       | Incorrect inconsisitency check on MAC-ehs reordering queue   | 7.17.0 | 7.18.0 |  |  |
|         | RP-49          | RP-100841 | 4237 | -       | Flexible RLC only applies to user RB, not SRB  | 7.17.0 | 7.18.0 |  |  |
|         | RP-49          | RP-100883 | 4242 | -       | LI size for CCCH(SRB#0) in enhanced CELL_FACH operation  | 7.17.0 | 7.18.0 |  |  |
|         | RP-49          | RP-100844 | 4272 | -       | Clarifications to the intra-frequency measurement event for 1.28Mcps TDD   | 7.17.0 | 7.18.0 |  |  |
|         | RP-49          | RP-100844 | 4279 | -       | Correction to default radio configuration #20  | 7.17.0 | 7.18.0 |  |  |
|         | RP-49          | RP-100842 | 4298 | -       | Clarification of when to clear IE Precoding weight set restriction" from MIMO_PARAMS"  | 7.17.0 | 7.18.0 |  |  |
| 03/2011 | RP-51          | RP-110264 | 4454 | -       | PCI Weight set restriction logic   | 7.18.0 | 7.19.0 |  |  |
|         | RP-51          | RP-110264 | 4462 | -       | Use of New H-RNTI in UMI message in CELL_DCH state   | 7.18.0 | 7.19.0 |  |  |
|         | RP-51          | RP-110264 | 4473 | 1       | Reconfiguration messages and HS-SSCH orders interaction for DTX/DRX  | 7.18.0 | 7.19.0 |  |  |
| 06/2011 | RP-52          | RP-110826 | 4603 | -       | Handling of START value due to an RLC reestablishment when DL RLC PDU size is reconfigured from fixed to flexible with 15-bit LI       | 7.19.0 | 7.20.0 |  |  |
|         | RP-52          | RP-110826 | 4623 | -       | Clarification to the number of HARQ processes in HSDPA when switching between MIMO and non-MIMO  | 7.19.0 | 7.20.0 |  |  |
|         | RP-52          | RP-110827 | 4663 | 1       | Informative note of UE behaviour when change of the value of Use special value of HE field without downlink RLC entity reestablishment | 7.19.0 | 7.20.0 |  |  |

## History

|         | Document history |             |  |  |  |  |  |  |
|---------|------------------|-------------|--|--|--|--|--|--|
| V7.0.0  | March 2006       | Publication |  |  |  |  |  |  |
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