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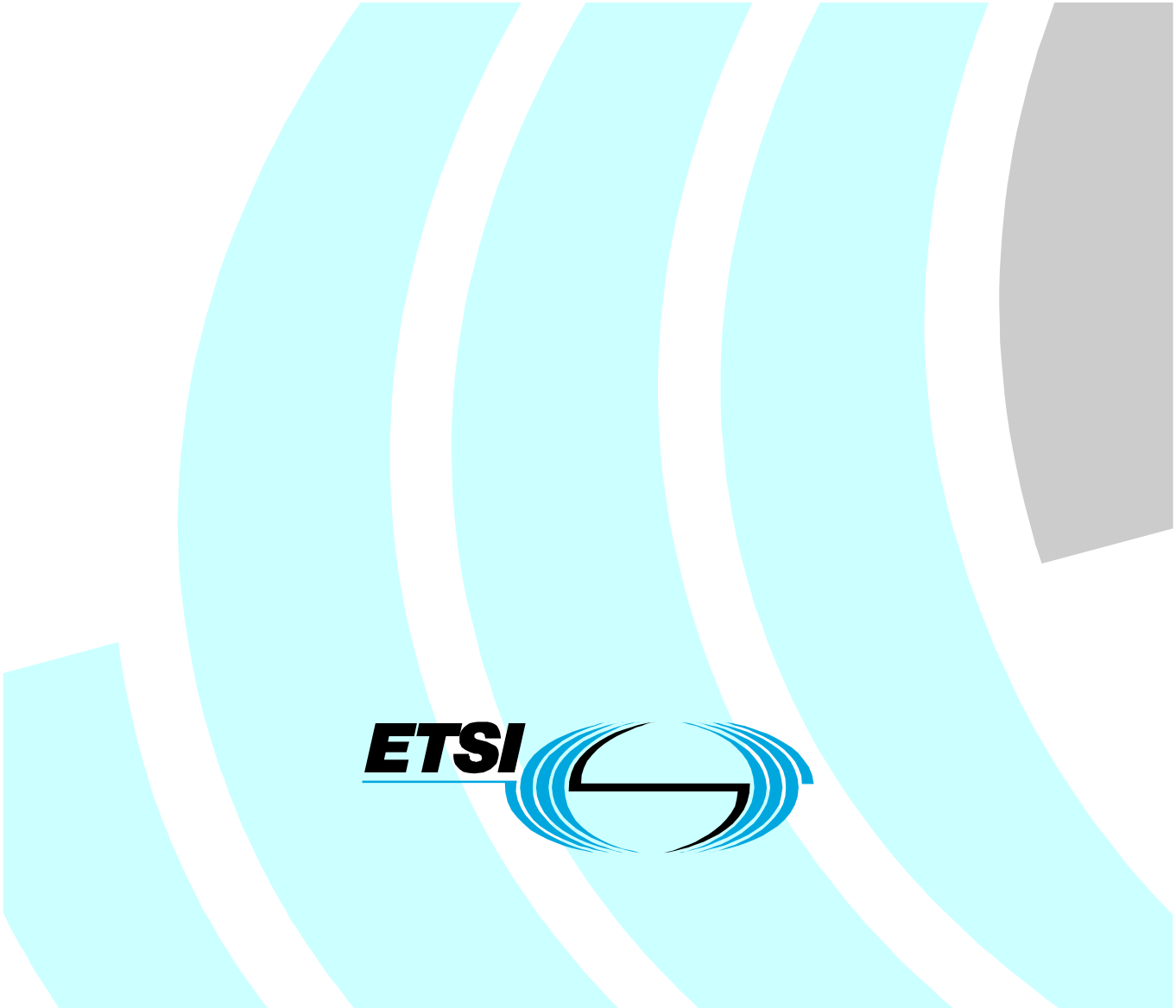
Technical Specification

Broadband Radio Access Networks (BRAN);
HIPERACCESS;
Conformance testing for the Data Link Control (DLC) layer;
Part 1: Protocol Implementation Conformance Statement (PICS) proforma



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Foreword

This Technical Specification (TS) has been produced by ETSI Project Broadband Radio Access Networks (BRAN).

The present document is part 1 of a multi-part covering Broadband Radio Access Networks (BRAN); HIPERACCESS; Data Link Control (DLC) layer as identified below:

Part 1: "Protocol Implementation Conformance Statement (PICS) proforma";

Part 2: "Test Suite Structure and Test Purposes (TSS&TP) specification";

Part 3: "Abstract Test Suite (ATS)".

Introduction

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a telecommunication specification. When such a statement is based on a protocol, it is called PICS.

1 Scope

The present document provides the PICS proforma for BRAN HIPERACCESS DLC layer, as defined in TS 102 000 [1] in compliance with the relevant requirements, and in accordance with the relevant guidance given in ISO/IEC 9646-7 [4] and ETS 300 406 [2].

It details in tabular form the implementation options, i.e. the optional functions additional to those, which are mandatory to implement.

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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

[1] ETSI TS 102 000: "Broadband Radio Access Networks (BRAN); HIPERACCESS; DLC protocol specification".

[2] ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

[3] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[4] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation conformance statement".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ISO/IEC 9646-1 [3], ISO/IEC 9646-7 [4] TS 102 000 [1] and the following apply:

Implementation Conformance Statement (ICS): statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented. The ICS can take several forms: protocol ICS, profile ICS, profile specific ICS, information object ICS, etc.

ICS proforma: document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS

Profile ICS: ICS for an implementation or system claimed to conform to a given profile specification

Protocol ICS (PICS): ICS for an implementation or system claimed to conform to a given protocol specification

Profile Requirement List (PRL): requirement list for an implementation or system claimed to conform to a given profile specification

3.2 Abbreviations

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

AP	Access Point (= base station)
ARQ	Automatic Repeat reQuest
AT	Access Termination (= terminal = subscriber station)
BC	Broadcast Control
BRAN	Broadband Radio Access Network
CC	Connection Control
CL	Convergence Layer
DES	Data Encryption Standard
DL	Down Link
DLC	Data Link Control (layer)
FDD	Frequency Division Duplex
FDD	Frequency Division Duplex
H-FDD	Frequency Division Half Duplex
IC	Initialization Control
IUT	Under Test
MAC	Medium Access Control
MAC	Message Authentication Code
PDU	Protocol Data Unit
PHY	PHYsical
QAM	Quadrature Amplitude Modulation
QoS	Quality of Service
RLC	Radio Link Control
RRC	Radio Resource Control
SAR	Segmentation And Re-assembly
SC	Security Control
SUT	System Under Test
TDD	Time Division Duplex
TEK	Traffic Encryption Key
TS	Technical Specification
UL	Up Link

4 Conformance to this PICS proforma specification

If it claims to conform to the present document, the actual PICS proforma to be filled in by a supplier shall be technically equivalent to the text of the PICS proforma given in annex A, and shall preserve the numbering/naming and ordering of the proforma items.

An PICS which conforms to the present document shall be a conforming PICS proforma completed in accordance with the guidance for completion given in clause A.1.

Annex A (normative): Protocol ICS proforma for TS 102 000

A.1 Guidance for completing the proforma

A.1.1 Purposes and structure

The purpose of this PICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in TS 102 000 [1] may provide information about the implementation in a standardized manner.

The PICS proforma is subdivided into clauses for the following categories of information:

- guidance for completing the PICS proforma;
- identification of the implementation;
- identification of the TS 102 000;
- global statement of conformance;
- roles;
- major capabilities;
- PDUs;
- PDU parameters.

A.1.2 Abbreviations and conventions

The PICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [4].

Item column

The item column contains a number, which identifies the item in the table.

Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

Status column

The following notations, defined in ISO/IEC 9646-7 [4], are used for the status column:

m	mandatory - the capability is required to be supported.
o	optional - the capability may be supported or not.
n/a	not applicable - in the given context, it is impossible to use the capability.
x	prohibited (excluded) - there is a requirement not to use this capability in the given context.

o.i qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies an unique group of related optional items and the logic of their selection which is defined immediately following the table.

ci conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying an unique conditional status expression which is defined immediately following the table.

i irrelevant (out-of-scope) - capability outside the scope of the reference specification. No answer is requested from the supplier.

NOTE 1: This use of "i" status is not to be confused with the suffix "i" to the "o" and "c" statuses above.

Reference column

The reference column makes reference to TS 102 000 [1], except where explicitly stated otherwise.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7 [4], are used for the support column:

Y or y supported by the implementation.

N or n not supported by the implementation.

N/A, n/a or - no answer required (allowed only if the status is n/a, directly or after evaluation of a conditional status).

If this PICS proforma is completed in order to describe a multiple-profile support in a system, it is necessary to be able to answer that a capability is supported for one profile and not supported for another. In that case, the supplier shall enter the unique reference to a conditional expression, preceded by "?" (e.g. ?3). This expression shall be given in the space for comments provided at the bottom of the table. It uses predicates defined in the SCS, each of which refers to a single profile and which takes the value TRUE if and only if that profile is to be used.

EXAMPLE 1: ?3: IF prof1 THEN Y ELSE N

NOTE 2: As stated in ISO/IEC 9646-7 [4], support for a received PDU requires the ability to parse all valid parameters of that PDU. Supporting a PDU while having no ability to parse a valid parameter is non-conformant. Support for a parameter on a PDU means that the semantics of that parameter are supported.

Values allowed column

The values allowed column contains the type, the list, the range, or the length of values allowed. The following notations are used:

- range of values: <min value> .. <max value>
  example: 5 .. 20

- list of values: <value1>, <value2>, ..., <valueN>
  example: 2 ,4 ,6 ,8, 9
  example: '1101'B, '1011'B, '1111'B
  example: '0A'H, '34'H, '2F'H

- list of named values: <name1>(<val1>), <name2>(<val2>), ..., <nameN>(<valN>)
  example: reject(1), accept(2)

- length: size (<min size> .. <max size>)
  example: size (1 .. 8)

Values supported column

The values supported column shall be filled in by the supplier of the implementation. In this column, the values or the ranges of values supported by the implementation shall be indicated.

References to items

For each possible item answer (answer in the support column) within the PICS proforma a unique reference exists, used, for example, in the conditional expressions. It is defined as the table identifier, followed by a character "/", followed by the item number in the table. If there is more than one support column in a table, the columns are discriminated by letters (a, b, etc.), respectively.

EXAMPLE 2: A.5/4 is the reference to the answer of item 4 in table 5 of annex A.

EXAMPLE 3: A.6/3b is the reference to the second answer (i.e. in the second support column) of item 3 in table 6 of annex A.

Prerequisite line

A prerequisite line takes the form: Prerequisite: <predicate>.

A prerequisite line after a clause or table title indicates that the whole clause or the whole table is not required to be completed if the predicate is FALSE.

A.1.3 Instructions for completing the PICS proforma

The supplier of the implementation shall complete the PICS proforma in each of the spaces provided. In particular, an explicit answer shall be entered, in each of the support or supported column boxes provided, using the notation described in clause A.1.2.

However, the tables containing in "Access Termination AT" clause shall only be completed for AT implementations, and the tables containing in "Access Point AP" clause shall only be completed for AP implementations.

If necessary, the supplier may provide additional comments in space at the bottom of the tables or separately.

More detailed instructions are given at the beginning of the different clauses of the PICS proforma.

A.2 Identification of the implementation

Identification of the Implementation Under Test (IUT) and the system in which it resides (the System Under Test (SUT)) should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the PICS should be named as the contact person.

A.2.1 Date of the statement

.....

A.2.2 Implementation Under Test (IUT) identification

IUT name:

.....

.....

IUT version:

.....

A.2.3 System Under Test (SUT) identification

SUT name:

.....

.....

Hardware configuration:

.....

.....

.....

Operating system:

.....

A.2.4 Product supplier

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.2.5 Client (if different from product supplier)

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

A.2.6 PICS contact person

(A person to contact if there are any queries concerning the content of the PICS)

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.3 Identification of the TS 102 000

This proforma applies to the protocols described in TS 102 000: Broadband Radio Access Networks (BRAN) HIPERACCESS DLC protocol specification.

A.4 Global statement of conformance

Are all mandatory capabilities implemented? (Yes/No) .....

NOTE: Answering "No" to this question indicates non-conformance to the TS 102 000 specification. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming, on pages attached to the PICS proforma.

A.5 Roles

Table A.1: Roles

Item	Role	Reference	Status	Support
1	Access Termination AT	4	o.1	
2	Access Point AP	4	o.1	
o.1:	It is mandatory to support at least one of these items.			

A.6 Access Termination (AT)

This clause contains the PICS proforma tables related to the Access Termination (AT). They need to be completed for description of AT implementations only.

Prerequisite: A.1/1 -- Access Termination (AT)

A.6.1 Major MAC capabilities and functionalities for AT

Table A.2: Major MAC functionalities for AT

Item	Name	Reference	Status	Support
1	Range of multiplexing schemes	4.2.3	m	
2	Range of connection types	7.1	m	
3	Dynamic multicast group allocation	4.5.6	m	
4	Error control using ARQ protocol (retransmission of erroneous UL data)	4.3.3, 8.5	m	
5	Procedure for power control in UL	4.6.2	m	
6	Encryption of MAC PDU payload (unicast connection)	8.1	m	
7	SAR Segmentation and Reassembly of messages	7.3.1	m	
8	AT issues Request for resource allocation	9.3	m	
9	AT sends MAC PDUs upon reception of GRANTs	9.2	m	
10	AT supports bandwidth request contention procedure	9.5	o	

Table A.3: Additional specifications for ARQ

Item	Name	Reference	Specified	Supported
1	Number of retransmissions possibly imposed by the AP	8.5.1	up to 2	

Table A.4: Types of grants

Item	Name	Reference	Status	Supported
1	grant for Initialization and ranging	8.7.4	m	
2	grant for bandwidth request	9.1, 9.4	m	
3	grant for Contention resolution	9.5	c0401	
c0401: IF A.2/10 - if AT supports contention bandwidth request procedure THEN m -- then mandatory ELSE n/a				

Table A.5: Additional specifications for RESOURCE ALLOCATION grants

Item	Name	Reference	Status	Supported
1	Continuous grant	9.4	m	
2	Polling	9.4	m	
3	Piggyback	9.4	m	
4	Poll-me bit	9.4	m	

Table A.6: AT multiplexing schemes

Item	Name	Reference	Status	Support
1	Frequency Division Duplex (FDD)	4.2.3, 8.3	o.2	
2	Time Division Duplex (TDD)	4.2.3, 8.3	o.2	
3	Frequency Division Half Duplex (H-FDD)	4.2.3, 8.3	o.2	
o.2: It is mandatory to support at least one of these items.				

Table A.7: Connection types

Item	Name	Reference	Status	Support
1	Basic management connection	7.1	m	
2	Primary management connection	7.1	m	
3	Secondary management connection	7.1	m	
4	Broadcast connection (Down Link (DL) only)	7.1	m	
5	Multicast connections (Down Link (DL) only)	4.5.6, 7.1	m	

Table A.8: MAC PDUs

Item	Name	Reference	Status	Support
1	Segmented long MAC signalling PDU	7.2, 8.1	m	
2	Non-Segmented long MAC signalling PDU	7.2, 8.1	m	
3	Short MAC signalling PDU (Up Link (UL) only)	7.2, 8.1	m	
4	MAC data PDU	7.2, 8.1	m	
5	long MAC dummy PDU	7.2, 8.1	m	
6	Short MAC dummy PDU (Up Link (UL) only)	7.2, 8.1	m	

A.6.2 Major DLC capabilities and functionalities for AT

Table A.9: Major AT DLC functionalities

Item	Name	Reference	Status	Support
1	Initialization Control	10	m	
2	Radio Resource Control (RRC)	11	m	
3	Security Control	12	m	
4	Connection Control	13	m	

A.6.2.1 Services supporting Initialization Control Function

The supplier of the implementation shall state the support of the implementation for the services required by each of the following procedures and associated capabilities.

Table A.10: Initialization Control procedures

Item	Services supporting:	Reference	Status	Support
1	Synchronization and parameters acquisition	10.3	m	
2	Ranging	10.4	m	
3	Physical capabilities negotiation	10.5.1	m	
4	AT Authentication	10.5.2	m	
5	Other capabilities negotiation	10.5.3	m	

Table A.11: Physical capabilities under negotiation

Item	Capabilities	Reference	Status	Support
1	64 Quadrature Amplitude Modulation (QAM) in DL	10.5.1	o	
2	16 QAM in UL	10.5.1	o	
3	Support of Turbo encoding	10.5.1	o	
4	Triple DES support	10.5.1	o	

AT multiplexing schemes are defined in table A.6

A.6.2.2 Services supporting Radio Resource Control function

The supplier of the implementation shall state the support of the implementation for the services required by each of the following procedures and associated capabilities.

Table A.12: Radio Resource Control procedures

Item	Services supporting:	Reference	Status	Support
1	Link supervision	11.2	m	
2	UL radio channel measurement	11.3.2	m	
3	DL radio channel measurement, initiated by AT	11.3.3	m	
4	Adaptive change of UL physical modes	11.3.1	m	
5	Adaptive change of DL physical modes	11.3.4	m	
6	Automatic transmit power control for UL	11.3.5	m	
7	Automatic transmit power control for DL	11.3.6	o	
8	Automatic UL transmit time control	11.3.5	m	
9	Change of PHYsical (PHY) mode set	11.4	m	
10	Change of UL structure	11.5, 5.2.6	m	
11	Load levelling (inter-carrier handover)	11.6	m	

Table A.13: Set of Physical modes

Item	Name	Reference	Status	Support
1	Initial set of Physical modes	4.6.1	m	
2	Alternate set of Physical modes	4.6.1	m	

A.6.2.3 Services supporting Security Control (SC) function

The supplier of the implementation shall state the support of the implementation for the services required by each of the following procedures and associated capabilities.

Table A.14: Security Control procedures

Item	Services supporting:	Reference	Status	Support
1	Phased security basic (Phase 1)	12.2	m	
2	Phased security extended (Phase 2 and 3)	12.2	o	
3	Authentication	12.3	m	
4	Traffic Encryption Key (TEK) management	12.4	m	
5	Privacy (Data encryption)	12.5	m	
6	Cryptographic standards	12.6	m	

A.6.2.4 Services supporting Connection Control (CC) function

The supplier of the implementation shall state the support of the implementation for the services required by each of the following procedures and associated capabilities.

Table A.15: Connection Control procedures

Item	Services supporting:	Reference	Status	Support
1	UL and DL Connection establishment initiated by AP or AT	13.4.2	m	
2	UL and DL Connection change initiated by AP or AT	13.4.3	m	
3	UL and DL Connection deletion initiated by AP or AT	13.4.4	m	
4	DL multicast connection established by AP	13.5	m	

A.6.2.5 Supported convergence layers and associated QoS

The supplier of the implementation shall state the support of the implementation for convergence layers and associated Quality of Services (QoS) provided to the upper layers.

Table A.16: Supported Convergence Layers (CL)

Item	Type of CL	Reference	Status	Support
1	Cell based CL, constant bit rate	4.4.1	m	
2	Cell based CL, variable bit rate, real time	4.4.1	m	
3	Cell based CL, variable bit rate, non real time	4.4.1	m	
4	Cell based CL, unspecified bit rate	4.4.1	m	
5	Packet based CL	4.4.2	m	

Table A.17: Quality of services

Item	QoS supporting CL	Reference	Status	Support
1	Periodic real time	4.4.3	m	
2	Real time	4.4.3	m	
3	Non real time	4.4.3	m	
4	Best effort	4.4.3	m	

A.6.3 DLC PDU descriptions, seen from AT

In the following PDU tables, status with m or o is the only valid case, due to the direction of the PDU. When not applicable to a given direction, status not applicable (n/a) is defined.

A.6.3.1 PDU descriptions for MAC and Broadcast support

Table A.18: Broadcast Control (BC) and MAC PDUs

Item	PDU	AT receiving			AT sending		
		Reference	Status	Support	Reference	Status	Support
1	RlcGeneralBroadcastInformation	8.8	m			n/a	
2	RlcMultipleTidBroadcastBasic	7.1	m			n/a	
3	RlcBandwidthReq		n/a		9.3.3	m	
4	RlcQueueStatusReq	9.3.4	m			n/a	
5	RlcQueueStatusRsp		n/a		9.3.4	m	

A.6.3.2 PDU descriptions for Initialization Control (IC) support

Table A.19: Initialization Control PDUs

Item	PDU	AT receiving			AT sending		
		Reference	Status	Support	Reference	Status	Support
1	RlcFrequencyList	10.3	m			n/a	
2	RlcRangingInvitation	10.4	m			n/a	
3	RlcRangingReq		n/a		10.4	m	
4	RlcRangingContinue	10.4	m			n/a	
5	RlcRangingSuccess	10.4	m			n/a	
6	RlcRangingAck		n/a		10.4	m	
7	RlcPhyCapabilitiesReq	10.5	m			n/a	
8	RlcPhyCapabilitiesInfo		n/a		10.5	m	
9	RlcPhyCapabilitiesCnf	10.5	m			n/a	
10	RlcOtherCapabilitiesReq	10.5	m			n/a	
11	RlcOtherCapabilitiesInfo		n/a		10.5	m	
12	RlcOtherCapabilitiesCnf	10.5	m			n/a	

A.6.3.3 PDU descriptions for Radio Resource Control (RRC) support

Table A.20: Radio Resource Control PDUs

Item	PDU	AT receiving			AT sending		
		Reference	Status	Support	Reference	Status	Support
1	RlcInitializationCmd	11.2.3	m			n/a	
2	RlcDownlinkPhyModeChange	11.3.4	m			n/a	
3	RlcDownlinkPhyModeChangeAck		n/a		11.3.4	m	
4	RlcMeasurementReportData		n/a		11.3.3	m	
5	RlcMeasurementReportCriterium	11.3.3	m			n/a	
6	RlcUplinkCorrection	11.3.5	m			n/a	
7	RlcHandoverCmd	11.6	m			n/a	
8	RlcHandoverAck		n/a		11.6	m	

A.6.3.4 PDU descriptions for Security Control (SC) support

Table A.21: Security Control PDUs

Item	PDU	AT receiving			AT sending		
		Reference	Status	Support	Reference	Status	Support
1	RlcAuthCertificateReq	12.1.2, 12.3.2	m			n/a	
2	RlcAuthCertificateInfo		n/a		12.1.2, 12.3.2	m	
3	RlcAuthReject	12.1.2, 12.3.2	m			n/a	
4	RlcAuthKeyCmd	12.1.2, 12.3.2	m			n/a	
5	RlcAuthKeyAck		n/a		12.1.2, 12.3.2	m	
6	RlcAuthKeyNack		n/a		12.1.2, 12.3.2	m	
7	RlcTekAllocationFirst	12.1.2, 12.3.2	m			n/a	
8	RlcTekAllocationRefresh	12.1.2, 12.3.2	m			n/a	
9	RlcTekAllocationFirstAck		n/a		12.1.2, 12.3.2	m	
10	RlcTekAllocationRefreshAck		n/a		12.1.2, 12.3.2	m	
11	RlcTekAllocationFirstNack		n/a		12.1.2, 12.3.2	m	
12	RlcTekAllocationRefreshNack		n/a		12.1.2, 12.3.2	m	
13	RlcTekAllocationFirstTimerStop	12.1.2, 12.3.2	m			n/a	

A.6.3.5 PDU descriptions for Connection Control (CC) support

Table A.22: Connection Control PDUs

Item	PDU	AT receiving			AT sending		
		Reference	Status	Support	Reference	Status	Support
1	RLCConnectionAdditionInit		n/a		13.2	m	
2	RLCConnectionAdditionSetup	13.2	m			n/a	
3	RLCConnectionAdditionAck		n/a		13.2	m	
4	RLCConnectionChangeInit		n/a		13.2	m	
5	RLCConnectionChangeSetup	13.2	m			n/a	
6	RLCConnectionChangeAck		n/a		13.2	m	
7	RLCConnectionDeletionInit	13.2	m		13.2	m	
8	RLCConnectionDeletionAck	13.2	m		13.2	m	

A.6.4 PDU parameters, PDU values, Timers

See clauses A.8 to A.10, common to AT and AP

A.7 Access Point (AP)

This clause contains the PICS proforma tables related to the Access Point (AP). They need to be completed for description of AP implementations only.

Prerequisite: A.1/2 -- Access Point (AP)

A.7.1 Major MAC capabilities and functionalities for AP

Table A.23: Major MAC functionalities for AP

Item	Name	Reference	Status	Support
1	Range of multiplexing schemes	4.2.3	m	
2	Range of connection types	4.5.6, 7.1	m	
3	Dynamic multicast group allocation	4.5.6	m	
4	Error control using ARQ protocol (retransmission of erroneous UL data)	4.3.3, 8.5	o	
5	Procedure for power control in UL	4.6.2	m	
6	Procedure for power control in DL	4.6.2	o	
7	Encryption of MAC PDU payload (unicast connection)	5.1	m	
8	SAR Segmentation and Reassembly of messages	7.3.1	m	
9	AP receives Request for resource and solves the allocation	9.3	m	
10	AP sends GRANTs as answers to REQUESTs for resource allocation	9.2	m	
11	AP supports bandwidth request contention procedure	9.5	o	
12	AP provides fixed bandwidth capacity by assigning a continuous grant	9.4.1	m	

Table A.24: Additional specifications for ARQ

Item	Name	Reference	Specified	Supported
1	Number of retransmissions possibly imposed by the AP to the AT	8.5.1	0,1,or 2	

Table A.25: Types of grants

Item	Name	Reference	Status	Supported
1	grant for Initialization and ranging	8.7.4	m	
2	grant for bandwidth request	9.1, 9.4	m	
3	grant for Contention resolution	9.5	c2501	
c2501: F A23/11 - if AP supports contention bandwidth request procedure THEN m -- then mandatory ELSE n/a				

Table A.26: Additional specifications for RESOURCE ALLOCATION

Item	Name	Reference	Status	Supported
1	Continuous grant	13.2	m	
2	Polling	13.2	m	
3	Piggyback	13.2	m	
4	Poll-me bit	13.2	m	

Table A.27: AP Multiplexing schemes

Item	Name	Reference	Status	Support
1	FDD	4.2.3	o.3	
2	TDD	4.2.3	o.3	
3	H-FDD	4.2.3	c2701	
o.3: It is mandatory to support at least one of these items. c2701: IF A.27/1 - - AP supports FDD THEN m -- then mandatory ELSE n/a				

Table A.28: Connection types

Item	Name	Reference	Status	Support
1	Basic management connection	7.1	m	
2	Primary management connection	7.1	m	
3	Secondary management connection	7.1	m	
4	Broadcast connection (DL only)	7.1	m	
5	Multicast connections (DL only)	4.5.6, 7.1	m	

Table A.29: MAC PDUs types

Item	Name	Reference	Status	Support
1	Segmented long MAC signalling PDU	7.2, 8.1	m	
2	Non-Segmented long MAC signalling PDU	7.2, 8.1	m	
3	Short MAC signalling PDU (UL only)	7.2, 8.1	m	
4	MAC data PDU	7.2, 8.1	m	
5	long MAC dummy PDU	7.2, 8.1	m	
6	Short MAC dummy PDU (UL only)	7.2, 8.1	m	

Table A.30: Set of Physical modes

Item	Name	Reference	Status	Support
1	Initial set of Physical modes	4.6.1	m	
2	Alternate set of Physical modes	4.6.1	o	

A.7.2 Major DLC capabilities and functionalities for AP

Table A.31: Major AP DLC functionalities

Item	Name	Reference	Status	Support
1	IC	10	m	
2	RRC	11	m	
3	SC	12	m	
4	CC	13	m	

A.7.2.1 Services supporting IC function

The supplier of the implementation shall state the support of the implementation for the services required by each of the following procedures and associated capabilities.

Table A.32: Initialization Control procedures

Item	Services supporting:	Reference	Status	Support
1	Synchronization and parameters acquisition	10.3	m	
2	Ranging	10.4	m	
3	PHY capabilities negotiation	10.5.1	m	
4	AT Authentication	10.5.2	m	
5	Other capabilities negotiation	10.5.3	m	

Table A.33: Physical capabilities under negotiation

Item	Capabilities	Reference	Status	Support
1	64 QAM in DL	10.5.1	o	
2	16 QAM in UL	10.5.1	o	
3	Support of Turbo encoding	10.5.1	o	
4	Triple DES support	10.5.1	o	

AP multiplexing schemes are defined in table A.27.

A.7.2.2 Services supporting RRC function

The supplier of the implementation shall state the support of the implementation for the services required by each of the following procedures and associated capabilities.

Table A.34: RRC procedures

Item	Services supporting	Reference	Status	Support
1	Link supervision	11.2	m	
2	UL radio channel measurement	11.3.2	m	
3	DL radio channel measurement report procedure	11.3.3	m	
4	Adaptive change of DL physical modes	11.3.4	m	
5	Adaptive change of UL physical modes	11.3.1	m	
6	Automatic transmit power control for UL	11.3.5	m	
7	Automatic UL transmit time control	11.3.5	m	
8	Automatic transmit power control for DL	11.3.6	o	
9	Change of PHY mode set	11.4	m	
10	Change of UL structure	11.5, 5.2.6	o	
11	Load levelling (inter-carrier handover)	11.6	o	

Table A.35: Set of PHY modes

Item	Name	Reference	Status	Support
1	Initial set of PHY modes	4.6.1	m	
2	Alternate set of PHY modes	4.6.1	o	

A.7.2.3 Services supporting SC function

The supplier of the implementation shall state the support of the implementation for the services required by each of the following procedures and associated capabilities.

Table A.36: SC procedures

Item	Services supporting:	Reference	Status	Support
1	Phased security - basic (Phase 1)	12.2	m	
2	Phased security - extended (Phase 2 and 3)	12.2	o	
3	Authentication	12.3	m	
4	Traffic Encryption Key (TEK) management	12.4	m	
5	Privacy (Data encryption)	12.5	m	
6	Cryptographic standards	12.6	m	

A.7.2.4 Services supporting CC function

The supplier of the implementation shall state the support of the implementation for the services required by each of the following procedures and associated capabilities.

Table A.37: CC procedures

Item	Services supporting:	Reference	Status	Support
1	UL and DL Connection establishment initiated by AP or AT	13.4.2	m	
2	UL and DL Connection change initiated by AP or AT	13.4.3	m	
3	UL and DL Connection deletion initiated by AP or AT	13.4.4	m	
4	DL multicast connection established by AP	13.5	m	

A.7.2.5 Supported convergence layers and associated QoS

The supplier of the implementation shall state the support of the implementation for convergence layers and associated Quality of Services (QoS) provided to the upper layers.

Table A.38: Supported CL

Item	Type of CL	Reference	Status	Support
1	Cell based CL, constant bit rate	4.4.1	m	
2	Cell based CL, variable bit rate, real time	4.4.1	m	
3	Cell based CL, variable bit rate, non real time	4.4.1	m	
4	Cell based CL, unspecified bit rate	4.4.1	m	
5	Packet based CL	4.4.2	m	

Table A.39: Quality of services

Item	QoS supporting CL	Reference	Status	Support
1	Periodic real time	4.4.3	m	
2	Real time	4.4.3	m	
3	Non real time	4.4.3	m	
4	Best effort	4.4.3	m	

A.7.3 DLC PDU descriptions, seen from AP

In the following PDU tables, status with m or o is the only valid case, due to the direction of the PDU. When not applicable to a given direction, status not applicable (n/a) is defined.

A.7.3.1 PDU descriptions for MAC and Broadcast support

Table A.40: BC and MAC PDUs

Item	PDU	AP receiving			AP sending		
		Reference	Status	Support	Reference	Status	Support
1	RlcGeneralBroadcastInformation		n/a		8.8	m	
2	RlcMultipleTidBroadcastBasic		n/a		7.1	m	
3	RlcBandwidthReq	9.3.3	m			n/a	
4	RlcQueueStatusReq		n/a		9.3.4	m	
5	RlcQueueStatusRsp	9.3.4	m			n/a	

A.7.3.2 PDU descriptions for IC support

Table A.41: IC PDUs

Item	PDU	AP receiving			AP sending		
		Reference	Status	Support	Reference	Status	Support
1	RlcFrequencyList		n/a		10.3	m	
2	RlcRangingInvitation		n/a		10.4	m	
3	RlcRangingReq	10.4	m			n/a	
4	RlcRangingContinue		n/a		10.4	m	
5	RlcRangingSuccess		n/a		10.4	m	
6	RlcRangingAck	10.4	m			n/a	
7	RlcPhyCapabilitiesReq		n/a		10.5	m	
8	RlcPhyCapabilitiesInfo	10.5	m			n/a	
9	RlcPhyCapabilitiesCnf		n/a		10.5	m	
10	RlcOtherCapabilitiesReq		n/a		10.5	m	
11	RlcOtherCapabilitiesInfo	10.5	m			n/a	
12	RlcOtherCapabilitiesCnf		n/a		10.5	m	

A.7.3.3 PDU descriptions for RRC support

Table A.42: RRC PDUs

Item	PDU	AP receiving			AP sending		
		Reference	Status	Support	Reference	Status	Support
1	RlcInitializationCmd		n/a		11.2.3	m	
2	RlcDownlinkPhyModeChange		n/a		11.3.4	m	
3	RlcDownlinkPhyModeChangeAck	11.3.4	m			n/a	
4	RlcMeasurementReportData	11.3.3	m			n/a	
5	RlcMeasurementReportCriterium		n/a		11.3.3	m	
6	RlcUplinkCorrection		n/a		11.3.5	m	
7	RlcHandoverCmd		n/a		11.6	m	
8	RlcHandoverAck	11.6	m			n/a	

A.7.3.4 PDU descriptions for SC support

Table A.43: SC PDUs

Item	PDU	AP receiving			AP sending		
		Reference	Status	Support	Reference	Status	Support
1	RlcAuthCertificateReq		n/a		12.1.2, 12.3.2	m	
2	RlcAuthCertificateInfo	12.1.2, 12.3.2	m			n/a	
3	RlcAuthReject		n/a		12.1.2, 12.3.2	m	
4	RlcAuthKeyCmd		n/a		12.1.2, 12.3.2	m	
5	RlcAuthKeyAck	12.1.2, 12.3.2	m			n/a	
6	RlcAuthKeyNack	12.1.2, 12.3.2	m			n/a	
7	RlcTekAllocationFirst		n/a		12.1.2, 12.3.2	m	
8	RlcTekAllocationRefresh		n/a		12.1.2, 12.3.2	m	
9	RlcTekAllocationFirstAck	12.1.2, 12.3.2	m			n/a	
10	RlcTekAllocationRefreshAck	12.1.2, 12.3.2	m			n/a	
11	RlcTekAllocationFirstNack	12.1.2, 12.3.2	m			n/a	
12	RlcTekAllocationRefreshNack	12.1.2, 12.3.2	m			n/a	
13	RlcTekAllocationFirstTimerStop		n/a		12.1.2, 12.3.2	m	

A.7.3.5 PDU descriptions for CC support

Table A.44: CC PDUs

Item	PDU	AP receiving			AP sending		
		Reference	Status	Support	Reference	Status	Support
1	RLCConnectionAdditionInit	13.2	m			n/a	
2	RLCConnectionAdditionSetup		n/a		13.2	m	
3	RLCConnectionAdditionAck	13.2	m			n/a	
4	RLCConnectionChangeInit	13.2	m			n/a	
5	RLCConnectionChangeSetup		n/a		13.2	m	
6	RLCConnectionChangeAck	13.2	m			n/a	
7	RLCConnectionDeletionInit	13.2	m		13.2	m	
8	RLCConnectionDeletionAck	13.2	m		13.2	m	

A.7.4 PDU parameters, PDU values, Timers

See clauses A.8 to A.10, common to AT and AP

A.8 PDU parameters

This clause applies to AP or AT implementations

A.8.1 Parameters of PDUs for MAC and Bandwidth support

Table A.45: RLC general broadcast information (rlcGeneralBroadcastInformation)

Item	Parameter	Reference	Status	Support
1	duplexMode	8.8	m	
2	frameOffset	8.8	m	
3	tdmaZoneDownlink	8.8	m	
4	encryptionMode	8.8	m	
5	uplinkPowerIncRangingStart	8.8	m	
6	uplinkPowerMaxRangingStart	8.8	m	
7	downlinkPowerControl	8.8	m	
8	periodMeasurementReportGBI	8.8	m	
9	periodRangingInvitation	8.8	m	
10	uplinkNumberPduPerFecBlock	8.8	m	
11	uplinkNumberMidamblePerBurst	8.8	m	
12	crMaxNumberRetries	8.8	m	
13	crStartingWindowSize	8.8	m	
14	crMaxBackoffWindow	8.8	m	
15	fixedVariableChannelInd	8.8	m	
16	cellDimension	8.8	m	
17	phyModeSetDescriptorCurrent	8.8	m	
18	phyModeSetDescriptorFuture	8.8	o	

Table A.46: RLC multiple Tid (rlcMultipleTidBroadcastBasic)

Item	Parameter	Reference	Status	Support
1	tid	7.1	m	
2	messagesForTidPackingBasic	7.1	m	

Table A.47: RLC bandwidth request (rlcBandwidthReq)

Item	Parameter	Reference	Status	Support
1	caid2	9.3.3	m	
2	piggyback2	9.3.3	m	
3	caid3	9.3.3	m	
4	piggyback3	9.3.3	m	

Table A.48: RLC queue status request (rlcQueueStatusReq)

Item	Parameter	Reference	Status	Support
1	caid	9.3.4	m	

Table A.49: RLC queue status response (rlcQueueStatusRsp)

Item	Parameter	Reference	Status	Support
1	piggyback	9.3.4	m	

A.8.2 Parameters of PDUs for IC support

Table A.50: RLC frequency list (rlcFrequencyList)

Item	Parameter	Reference	Status	Support
1	uplinkCarrierFrequency	10.3	m	
2	downlinkCarrierFrequency	10.3	m	

Table A.51: RLC ranging invitation (rlcRangingInvitation)

Item	Parameter	Reference	Status	Support
1	atMacAddress	10.4	m	
2	tid	10.4	m	
3	basicCid	10.4	m	
4	primaryCid	10.4	m	
5	secondaryCid	10.4	m	
6	basicCaid	10.4	m	
7	primaryCaid	10.4	m	
8	secondaryCaid	10.4	m	
9	apTxPowerIndication	10.4	m	
10	uplinkPreambleLength	10.4	m	

Table A.52: RLC ranging request (rlcRangingReq)

Item	Parameter	Reference	Status	Support
1	rangingStatus	10.4	m	

Table A.53: RLC ranging continue (rlcRangingContinue)

Item	Parameter	Reference	Status	Support
1	timingAdjustRanging	10.4	m	
2	uplinkPowerIncRanging	10.4	m	

Table A.54: RLC ranging success (rlcRangingSuccess)

Item	Parameter	Reference	Status	Support
1	timingAdjustRanging	10.4	m	
2	uplinkPowerIncRanging	10.4	m	
3	initializationStatus	10.4	m	

Table A.55: RLC ranging ack (rlcRangingAck)

Item	Parameter	Reference	Status	Support
1	rangingStatus	10.4	m	

Table A.56: RLC physical capabilities request (rlcPhyCapabilitiesReq)

No parameter.

Table A.57: RLC physical capabilities info (rlcPhyCapabilitiesInfo)

Item	Parameter	Reference	Status	Support
1	downlink64QamSupport	10.5	m	
2	uplink16QamSupport	10.5	m	
3	uplinkTurboEncSupport	10.5	m	
4	uplinkPowerMaxQpsk	10.5	m	
5	uplinkPowerMax16Qam	10.5	m	
6	numberSaidSupport	10.5	m	
7	terminalType	10.5	m	
8	tripleDesSupport	10.5	m	
9	pairOfCarrierFrequenciesLow	10.5	m	
10	pairOfCarrierFrequenciesHigh	10.5	m	

Table A.58: RLC physical capabilities confirm (rlcPhyCapabilitiesCnf)

Item	Parameter	Reference	Status	Support
1	downlink64QamUse	10.5	m	
2	uplink16QamUse	10.5	m	
3	uplinkTurboEncUse	10.5	m	
4	uplinkPreambleLength	10.5	m	
5	uplinkPowerMaxQpsk	10.5	m	
6	uplinkPowerMax16Qam	10.5	m	
7	securityUse	10.5	m	
8	tripleDesUse	10.5	m	
9	initializationStatus	10.5	m	

Table A.59: RLC other capabilities request (rlcOtherCapabilitiesReq)

No parameter.

Table A.60: RLC other capabilities info (rlcOtherCapabilitiesInfo)

Item	Parameter	Reference	Status	Support
1	numberUplinkConnsSupport	10.5	m	
2	numberDownlinkConnsSupport	10.5	m	
3	numberConnAggsSupport	10.5	m	
4	numberConnsPerConnAggSupport	10.5	m	
5	crSupport	10.5	m	
6	terminalClCapabilities	10.5	m	

Table A.61: RLC other capabilities confirm (rlcOtherCapabilitiesCnf)

Item	Parameter	Reference	Status	Support
1	numberUplinkConnsUse	10.5	m	
2	numberDownlinkConnsUse	10.5	m	
3	numberConnAggsUse	10.5	m	
4	numberConnsPerConnAggUse	10.5	m	

Table A.62: RLC initialisation command (rlcInitializationCmd)

Item	Parameter	Reference	Status	Support
1	initializationCmd	11.2.3	m	

A.8.3 Parameters of PDUs for Radio Resource Control support

Table A.63: RLC measurement report data (rlcMeasurementReportData)

Item	Parameter	Reference	Status	Support
1	cnrMeasured	11.3.3	m	
2	rxPowerMeasured	11.3.3	m	
3	txPowerMeasured	11.3.3	m	
4	txPowerMargin	11.3.3	m	
5	maxUplinkPhyMode	11.3.3	m	
6	actualUplinkPhyMode	11.3.3	m	
7	downlinkPhyModeWanted	11.3.3	m	

Table A.64: RLC downlink physical mode change (rlcDownlinkPhyModeChange)

Item	Parameter	Reference	Status	Support
1	downlinkPhyModeGranted	11.3.3	m	

Table A.65: RLC downlink physical mode change ack (rlcDownlinkPhyModeChangeAck)

Item	Parameter	Reference	Status	Support
1	downlinkPhyModeGrantedAck	11.3.3	m	

Table A.66: RLC uplink correction (rlcUplinkCorrection)

Item	Parameter	Reference	Status	Support
1	uplinkPowerInc	11.3.3	m	
2	timingAdjustFine	11.3.3	m	
3	measurementReportReq	11.3.3	m	

Table A.67: RLC measurement report criterium (rlcMeasurementReportCriterium)

Item	Parameter	Reference	Status	Support
1	periodMeasurementReportAtSpecific	11.3.3	m	

Table A.68: RLC handover command (rlcHandoverCmd)

Item	Parameter	Reference	Status	Support
1	atMacAddress	11.6	m	
2	newPairOfCarrierFrequencies	11.6	m	
3	apcId	11.6	m	

Table A.69: RLC handover acknowledge (rlcHandoverAck)

Item	Parameter	Reference	Status	Support
1	atMacAddress	11.6	m	

A.8.4 Parameters of PDUs for SC support

Table A.70: RLC Authentication Certificate Request (rlcAuthCertificateReq)

Item	Parameter	Reference	Status	Support
1	atMacAddress	12.2	m	
2	initializationStatus	12.2	m	

Table A.71: RLC Authentication Certificate information (rlcAuthCertificateInfo)

Item	Parameter	Reference	Status	Support
1	atCertificate	12.2	m	
2	manufacturerCertificate	12.2	m	

Table A.72: RLC Authorization Key Command (rlcAuthKeyCmd)

Item	Parameter	Reference	Status	Support
1	authKeyEncrypted	12.2	m	
2	hmacOfAuthKey	12.2	m	
3	nonce	12.2	m	

Table A.73: RLC Authorization Reject (rlcAuthReject)

Item	Parameter	Reference	Status	Support
1	authRejectErrorCode	12.2	m	
2	errorInfoText	12.2	m	

Table A.74: RLC Authorization Key Ack (rlcAuthKeyAck)

Item	Parameter	Reference	Status	Support
1	hmacOfNonceEncrypted	12.2	m	

Table A.75: RLC Authorization Key Nack (rlcAuthKeyNack)

No parameter.

Table A.76: RLC TEK allocation refresh (rlcTekAllocationRefresh)

Item	Parameter	Reference	Status	Support
1	tekEncrypted	12.2	m	
2	hmacOfTek	12.2	m	
3	ivp	12.2	m	
4	eksAllocated	12.2	m	
5	said	12.2	m	
6	nonce	12.2	m	

Table A.77: RLC TEK allocation first (rlcTekAllocationFirst)

Item	Parameter	Reference	Status	Support
1	tek1Encrypted	12.2	m	
2	hmacOfTek1	12.2	m	
3	ivp1	12.2	m	
4	tek2Encrypted	12.2	m	
5	hmacOfTek2	12.2	m	
6	eksAllocated1	12.2	m	
7	said	12.2	m	
8	nonce	12.2	m	

Table A.78: RLC TEK allocation Refresh Ack (rlcTekAllocationRefreshAck)

Item	Parameter	Reference	Status	Support
1	eksAllocated	12.2	m	
2	hmacOfNonceEncrypted	12.2	m	
3	said	12.2	m	

Table A.79: RLC TEK allocation First Ack (rlcTekAllocationFirstAck)

Item	Parameter	Reference	Status	Support
1	eksAllocated1	12.2	m	
2	hmacOfNonceTek1Encrypted	12.2	m	
3	hmacOfNonceTek2Encrypted	12.2	m	
4	said	12.2	m	

Table A.80: RLC TEK allocation Refresh Nack (rlcTekAllocationRefreshNack)

Item	Parameter	Reference	Status	Support
1	said	12.2	m	

Table A.81: RLC TEK allocation first Nack (rlcTekAllocationFirstNack)

Item	Parameter	Reference	Status	Support
1	said	12.2	m	

Table A.82: RLC TEK allocation first timer stop (rlcTekAllocationFirstTimerStop)

Item	Parameter	Reference	Status	Support
1	said	12.2	m	

A.8.5 Parameters of PDUs for CC support

Table A.83: RLC Connection Addition Initialization (rlcConnectionAdditionInit)

Item	Parameter	Reference	Status	Support
1	transactionId	13.2	m	
2	clid	13.2	m	
3	connectionClParameters	13.2	m	
4	scid	13.2	m	
5	directionChoice	13.2	m	
6	arqUsage	13.2	m	

Table A.84: RLC Connection Addition Setup (rlcConnectionAdditionSetup)

Item	Parameter	Reference	Status	Support
1	transactionId	13.2	m	
2	assignedCid	13.2	m	
3	assignedCaid	13.2	m	
4	pmAssociation	13.2	m	
5	clid	13.2	m	
6	connectionClParameters	13.2	m	
7	scid	13.2	m	
8	directionChoice	13.2	m	
9	arqUsage	13.2	m	
10	said	13.2	m	
11	contentionFlag	13.2	o	
12	confirmationCode	13.2	o	

Table A.85: RLC Connection Addition Acknowledge (rlcConnectionAdditionAck)

Item	Parameter	Reference	Status	Support
1	transactionId	13.2	m	
2	assignedCid	13.2	m	
3	confirmationCode	13.2	m	

Table A.86: RLC Connection Change Initialization (rlcConnectionChangeInit)

Item	Parameter	Reference	Status	Support
1	transactionId	13.2	m	
2	cid	13.2	m	
3	scid	13.2	m	
4	directionChoice	13.2	m	
5	arqUsage	13.2	m	

Table A.87: RLC Connection Change Setup (rlcConnectionChangeSetup)

Item	Parameter	Reference	Status	Support
1	transactionId	13.2	m	
2	assignedCid	13.2	m	
3	assignedCaid	13.2	m	
4	pmAssociation	13.2	m	
5	scid	13.2	m	
6	directionChoice	13.2	m	
7	arqUsage	13.2	m	
8	contentionFlag	13.2	o	
9	confirmationCode	13.2	o	

Table A.88: RLC Connection Change Acknowledge (rlcConnectionChangeAck)

Item	Parameter	Reference	Status	Support
1	transactionId	13.2	m	
2	assignedCid	13.2	m	
3	confirmationCode	13.2	o	

Table A.89: RLC Connection Deletion Initialization (rlcConnectionDeletionInit)

Item	Parameter	Reference	Status	Support
1	transactionId	13.2	m	
2	requestedCid	13.2	m	

Table A.90: RLC Connection Deletion Acknowledge (rlcConnectionDeletionAck)

Item	Parameter	Reference	Status	Support
1	transactionId	13.2	m	
2	requestedCid	13.2	m	

A.9 Values of PDUs parameters

As there are no options in the definition of the parameter values, refer to the technical specifications in TS 102 000 and to the ASN.1 description for a complete definition of the parameter values, which are all mandatory.

A.10 Timers

This clause applies to AP or AT implementations

Table A.91: AT timers

Item	<Item description>	Reference	Status	Support	Value	
					Allowed range	Supported
1	T_BandwidthReq	A.3	m		8 ms	
2	T_RSB	A.3	m		8 ms	
3	T_Synchronization	A.3	m		3 hours	
4	T_RangingAck	A.3	m		3000 ms	
5	T_PhyCapabilitiesInfo	A.3	m		500 ms	
6	T_PhyCapabilitiesCnf	A.3	m		3000 ms	
7	T_OtherCapabilitiesInfo	A.3	m		500 ms	
8	T_OtherCapabilitiesCnf	A.3	m		3000 ms	
9	T_ConnectionAdditionInit	A.3	m		1000 ms	
10	T_ConnectionAdditionAck	A.3	m		6000 ms	
11	T_ConnectionChangeInit	A.3	m		1000 ms	
12	T_ConnectionChangeAck	A.3	m		6000 ms	
13	T_ConnectionDeletionInit	A.3	m		1000 ms	
14	T_ConnectionDeletionAck	A.3	m		6000 ms	
15	T_MeasurementReportData	A.3	m		500 ms	
16	T_DownlinkPhyModeChangeAck	A.3	m		3000 ms	
17	T_HandoverAck	A.3	m		3000 ms	
18	T_TekAllocationFirstAck	A.3	m		30000 ms	

Table A.92: AP timers

Item	<Item description>	Reference	Status	Support	Value	
					Allowed range	Supported
1	T_RangingAck	A.3	m		3000 ms	
2	T_PhyCapabilitiesReq	A.3	m		500 ms	
3	T_PhyCapabilitiesCnf	A.3	m		3000 ms	
4	T_OtherCapabilitiesReq	A.3	m		500 ms	
5	T_OtherCapabilitiesCnf	A.3	m		3000 ms	
6	T_InitializationCmd	A.3	m		500 ms	
7	T_ConnectionAdditionSetup	A.3	m		1000 ms	
8	T_ConnectionAdditionAck	A.3	m		6000 ms	
9	T_ConnectionChangeSetup	A.3	m		1000 ms	
10	T_ConnectionChangeAck	A.3	m		6000 ms	
11	T_ConnectionDeletionInit	A.3	m		1000 ms	
12	T_ConnectionDeletionAck	A.3	m		6000 ms	
13	T_DownlinkPhyModeChange	A.3	m		500 ms	
14	T_UplinkCorrection	A.3	m		8 ms	
15	T_HandoverCmd	A.3	m		500 ms	
16	T_AuthCertificateReq	A.3	m		5000 ms	
17	T_AuthKeyCmd	A.3	m		5000 ms	
18	T_TekAllocationFirst	A.3	m		5000 ms	
19	T_TekAllocationRefresh	A.3	m		5000 ms	

History

Document history		
V1.1.1	November 2002	Publication
V1.2.1	April 2004	Publication