

# ETSI TS 128 658 V17.2.0 (2025-01)



**Universal Mobile Telecommunications System (UMTS);  
LTE;  
Telecommunication management;  
Evolved Universal Terrestrial  
Radio Access Network (E-UTRAN)  
Network Resource Model (NRM)  
Integration Reference Point (IRP);  
Information Service (IS)  
(3GPP TS 28.658 version 17.2.0 Release 17)**



---

**Reference**

RTS/TSGS-0528658vh20

---

**Keywords**

LTE,UMTS

**ETSI**

---

650 Route des Lucioles  
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° w061004871

---

**Important notice**

The present document can be downloaded from the  
[ETSI Search & Browse Standards application](#).

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format on [ETSI deliver repository](#).

Users should be aware that the present document may be revised or have its status changed, this information is available in the [Milestones listing](#).

If you find errors in the present document, please send your comments to the relevant service listed under [Committee Support Staff](#).

If you find a security vulnerability in the present document, please report it through our [Coordinated Vulnerability Disclosure \(CVD\)](#) program.

---

**Notice of disclaimer & limitation of liability**

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

---

**Copyright Notification**

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2025.  
All rights reserved.

---

# Intellectual Property Rights

## Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the [ETSI IPR online database](#).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

## Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

**DECT™**, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™**, **LTE™** and **5G™** logo are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

---

# Legal Notice

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities. These shall be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between 3GPP and ETSI identities can be found at [3GPP to ETSI numbering cross-referencing](#).

---

# Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

# Contents

|   |    |
|---|----|
| Intellectual Property Rights .....                          | 2  |
| Legal Notice .....  | 2  |
| Modal verbs terminology.....                                | 2  |
| Foreword.....   | 6  |
| Introduction .....  | 6  |
| 1 Scope .....   | 7  |
| 2 References .....  | 7  |
| 3 Definitions and abbreviations.....                        | 9  |
| 3.1 Definitions .....                                       | 9  |
| 3.2 Abbreviations .....                                     | 9  |
| 4 Model .....   | 10 |
| 4.1 Imported and associated information .....               | 10 |
| 4.1.1 Imported information entities and local labels.....   | 10 |
| 4.1.2 Associated information entities and local labels..... | 11 |
| 4.2 Class diagram .....                                     | 11 |
| 4.2.1 Relationships.....                                    | 11 |
| 4.2.2 Inheritance .....                                     | 18 |
| 4.3 Class definitions .....                                 | 19 |
| 4.3.1 ENBFunction.....                                      | 19 |
| 4.3.1.1 Definition .....                                    | 19 |
| 4.3.1.2 Attributes.....                                     | 19 |
| 4.3.1.3 Attribute constraints .....                         | 20 |
| 4.3.1.4 Notifications.....                                  | 20 |
| 4.3.2 ExternalENBFunction.....                              | 20 |
| 4.3.2.1 Definition .....                                    | 20 |
| 4.3.2.2 Attributes.....                                     | 20 |
| 4.3.2.3 Attribute constraints .....                         | 20 |
| 4.3.2.4 Notifications.....                                  | 20 |
| 4.3.3 EUTranGenericCell.....                                | 20 |
| 4.3.3.1 Definition .....                                    | 20 |
| 4.3.3.2 Attributes.....                                     | 21 |
| 4.3.3.3 Attribute constraints .....                         | 21 |
| 4.3.3.4 Notifications.....                                  | 22 |
| 4.3.4 ExternalEUTranGenericCell.....                        | 22 |
| 4.3.4.1 Definition .....                                    | 22 |
| 4.3.4.2 Attributes.....                                     | 22 |
| 4.3.4.3 Attribute constraints .....                         | 22 |
| 4.3.4.4 Notifications.....                                  | 22 |
| 4.3.5 EUTranCellFDD .....                                   | 22 |
| 4.3.5.1 Definition .....                                    | 22 |
| 4.3.5.2 Attributes.....                                     | 23 |
| 4.3.5.3 Attribute constraints .....                         | 23 |
| 4.3.5.4 Notifications.....                                  | 23 |
| 4.3.6 ExternalEUTranCellFDD .....                           | 23 |
| 4.3.6.1 Definition .....                                    | 23 |
| 4.3.6.2 Attributes.....                                     | 23 |
| 4.3.6.3 Attribute constraints .....                         | 23 |
| 4.3.6.4 Notifications.....                                  | 23 |
| 4.3.7 EUTranCellTDD .....                                   | 23 |
| 4.3.7.1 Definition .....                                    | 23 |
| 4.3.7.2 Attributes.....                                     | 23 |
| 4.3.7.3 Attribute constraints .....                         | 23 |
| 4.3.7.4 Notifications.....                                  | 24 |

|          |   |    |
|----------|---|----|
| 4.3.8    | ExternaleUtranCellTDD .....             | 24 |
| 4.3.8.1  | Definition .....                        | 24 |
| 4.3.8.3  | Attribute constraints .....             | 24 |
| 4.3.8.4  | Notifications .....                     | 24 |
| 4.3.9    | EUtranRelation .....                    | 24 |
| 4.3.9.1  | Definition .....                        | 24 |
| 4.3.9.2  | Attributes .....                        | 24 |
| 4.3.9.3  | Attribute constraints .....             | 25 |
| 4.3.9.4  | Notifications .....                     | 25 |
| 4.3.10   | Link_ENB_ENB .....                      | 25 |
| 4.3.10.1 | Definition .....                        | 25 |
| 4.3.10.2 | Attributes .....                        | 25 |
| 4.3.10.3 | Attribute constraints .....             | 25 |
| 4.3.10.4 | Notifications .....                     | 25 |
| 4.3.11   | Cdma2000Relation .....                  | 25 |
| 4.3.11.1 | Definition .....                        | 25 |
| 4.3.11.2 | Attributes .....                        | 25 |
| 4.3.11.3 | Attribute constraints .....             | 26 |
| 4.3.11.4 | Notifications .....                     | 26 |
| 4.3.12   | MCEFunction .....                       | 26 |
| 4.3.12.1 | Definition .....                        | 26 |
| 4.3.12.2 | Attributes .....                        | 26 |
| 4.3.12.3 | Attribute constraints .....             | 26 |
| 4.3.12.4 | Notifications .....                     | 26 |
| 4.3.13   | MBSFNArea .....                         | 26 |
| 4.3.13.1 | Definition .....                        | 26 |
| 4.3.13.2 | Attributes .....                        | 26 |
| 4.3.13.3 | Attribute constraints .....             | 26 |
| 4.3.13.4 | Notifications .....                     | 27 |
| 4.3.14   | Link_MCE_ENB .....                      | 27 |
| 4.3.14.1 | Definition .....                        | 27 |
| 4.3.14.2 | Attributes .....                        | 27 |
| 4.3.14.3 | Attribute constraints .....             | 27 |
| 4.3.14.4 | Notifications .....                     | 27 |
| 4.3.15   | Link_MCE_MME .....                      | 27 |
| 4.3.15.1 | Definition .....                        | 27 |
| 4.3.15.2 | Attributes .....                        | 27 |
| 4.3.15.3 | Attribute constraints .....             | 27 |
| 4.3.15.4 | Notifications .....                     | 27 |
| 4.3.16   | RNFunction .....                        | 27 |
| 4.3.16.1 | Definition .....                        | 27 |
| 4.3.16.2 | Attributes .....                        | 28 |
| 4.3.16.3 | Attribute constraints .....             | 28 |
| 4.3.16.4 | Notifications .....                     | 28 |
| 4.3.17   | ExternalRNFunction .....                | 28 |
| 4.3.17.1 | Definition .....                        | 28 |
| 4.3.17.2 | Attributes .....                        | 28 |
| 4.3.17.3 | Attribute constraints .....             | 28 |
| 4.3.17.4 | Notifications .....                     | 28 |
| 4.3.18   | DeNBCapability .....                    | 28 |
| 4.3.18.1 | Definition .....                        | 28 |
| 4.3.18.2 | Attributes .....                        | 28 |
| 4.3.18.3 | Attribute constraints .....             | 28 |
| 4.3.18.4 | Notifications .....                     | 28 |
| 4.3.19   | CellOutageCompensationInformation ..... | 29 |
| 4.3.19.1 | Definition .....                        | 29 |
| 4.3.19.2 | Attributes .....                        | 29 |
| 4.3.19.3 | Attribute constraints .....             | 29 |
| 4.3.19.4 | Notifications .....                     | 29 |
| 4.3.20   | QciDscpMapping .....                    | 29 |
| 4.3.20.1 | Definition .....                        | 29 |

|                               |  |           |
|-------------------------------|--|-----------|
| 4.3.20.2                      | Attributes.....  | 29        |
| 4.3.20.3                      | Attribute constraints .....                                  | 29        |
| 4.3.20.4                      | Notifications.....   | 29        |
| 4.3.21                        | EUtranCellNMCentralizedSON .....                             | 29        |
| 4.3.21.1                      | Definition .....   | 29        |
| 4.3.21.2                      | Attributes.....  | 30        |
| 4.3.21.3                      | Attribute constraints .....                                  | 32        |
| 4.3.21.4                      | Notifications.....   | 32        |
| 4.3.22                        | WTFFunction .....  | 32        |
| 4.3.22.1                      | Definition .....   | 32        |
| 4.3.22.2                      | Attributes.....  | 32        |
| 4.3.22.3                      | Attribute constraints .....                                  | 32        |
| 4.3.22.4                      | Notifications.....   | 32        |
| 4.3.23                        | EP_Xw .....  | 32        |
| 4.3.23.1                      | Definition .....   | 32        |
| 4.3.23.2                      | Attributes.....  | 32        |
| 4.3.23.3                      | Attribute constraints .....                                  | 32        |
| 4.3.23.4                      | Notifications.....   | 32        |
| 4.3.24                        | WLANMobilitySet .....  | 32        |
| 4.3.24.1                      | Definition .....   | 32        |
| 4.3.24.2                      | Attributes.....  | 33        |
| 4.3.24.3                      | Attribute constraints .....                                  | 33        |
| 4.3.24.4                      | Notifications.....   | 33        |
| 4.3.25                        | MemberWLAN <<datatype>>.....                                 | 33        |
| 4.3.25.1                      | Definition .....   | 33        |
| 4.3.25.2                      | Attributes.....  | 33        |
| 4.3.25.3                      | Attribute constraints .....                                  | 33        |
| 4.3.25.4                      | Notifications.....   | 33        |
| 4.3.26                        | PLMNIId <<dataType>> .....                                   | 33        |
| 4.3.26.1                      | Definition .....   | 33        |
| 4.3.26.2                      | Attributes.....  | 33        |
| 4.3.26.3                      | Attribute constraints .....                                  | 33        |
| 4.3.26.4                      | Notifications.....   | 34        |
| 4.3.27                        | EUtranFreqRelation .....                                     | 34        |
| 4.3.27.1                      | Definition .....   | 34        |
| 4.3.27.2                      | Attributes.....  | 34        |
| 4.3.27.3                      | Attribute constraints .....                                  | 34        |
| 4.3.27.4                      | Notifications.....   | 34        |
| 4.3.28                        | EUtranFrequency .....  | 34        |
| 4.3.28.1                      | Definition .....   | 34        |
| 4.3.28.2                      | Attributes.....  | 34        |
| 4.3.28.3                      | Attribute constraints .....                                  | 35        |
| 4.3.28.4                      | Notifications.....   | 35        |
| 4.4                           | Attribute definitions .....                                  | 36        |
| 4.4.1                         | Attribute properties .....                                   | 36        |
| 4.4.2                         | Constraints .....  | 58        |
| 4.5                           | Common notifications .....                                   | 58        |
| 4.5.1                         | Alarm notifications .....                                    | 58        |
| 4.5.2                         | Configuration notifications .....                            | 58        |
| <b>Annex A (informative):</b> | <b>Notifications during a Cell Outage Compensation .....</b> | <b>59</b> |
| <b>Annex B (informative):</b> | <b>Change history .....</b>                                  | <b>63</b> |
| History .....                 |  | 64        |

---

# 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:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- 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.

---

# Introduction

The present document is part of a TS-family covering the 3<sup>rd</sup> Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

TS 28.657 Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP); Requirements

**TS 28.658 Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)**

TS 28.659 Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP); Solution Set (SS) definitions

---

# 1 Scope

The present document specifies the E-UTRAN network resource information that can be communicated between an IRPAgent and an IRPManager for telecommunication network management purposes, including management of converged networks.

This document specifies the semantics and behaviour of information object class attributes and relations visible across the reference point in a protocol and technology neutral way. It does not define their syntax and encoding.

The E-UTRAN NRM IRP comprises a set of specifications defining Requirements, a protocol neutral Information Service and one or more Solution Set(s).

The present document specifies the protocol neutral E-UTRAN NRM IRP: Information Service (IS). It reuses relevant parts of the Generic NRM IRP: IS in 3GPP TS 28.622 [6], either by direct reuse or sub-classing, and in addition to that defines E-UTRAN specific Information Object Classes.

In order to access the information defined by this NRM, an Interface IRP such as the "Basic CM IRP" is needed (3GPP TS 32.602 [7]). However, which Interface IRP is applicable is outside the scope of the present document.

The present document also specifies the ng-eNB network resource information that can be communicated among NG-RAN management system, including management of MR-DC operations which ng-eNB is involved in.

---

# 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 TS 32.101: "Telecommunication management; Principles and high level requirements".
- [2] 3GPP TS 32.102: "Telecommunication management; Architecture".
- [3] 3GPP TS 23.003: "Numbering, addressing and identification".
- [4] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".
- [5] 3GPP TS 28.628: "Self-Organizing Networks (SON) Policy Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".
- [6] 3GPP TS 28.622: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".
- [7] 3GPP TS 32.602: "Telecommunication management; Configuration Management (CM); Basic CM Integration Reference Point (IRP) Information Service (IS)".
- [8] 3GPP TS 36.321: "Universal Terrestrial Access Network (UTRAN); Medium Access Control (MAC) protocol specification".
- [9] 3GPP TS 23.401: "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".
- [10] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA) Radio Resource Control (RRC); Protocol specification".



- [11] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".
- [12] 3GPP TS 36.211: "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical Channels and Modulation"
- [13] 3GPP TS 36.101: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception"
- [14] 3GPP TS 36.104: "Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) radio transmission and reception"
- [15] 3GPP TS 32.500: "Telecommunication Management; Self-Organizing Networks (SON); Concepts and requirements"
- [16] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions"
- [17] 3GPP TS 21.905: "Vocabulary for 3GPP Specifications"
- [18] 3GPP TS 32.111-2: "Telecommunication management; Fault Management; Part 2: Alarm Integration Reference Point (IRP): Information Service (IS)"
- [19] 3GPP TS 23.002: "Network Architecture"
- [20] 3GPP TS 32.652: "Telecommunication management; Configuration Management (CM); GERAN network resources Integration Reference Point (IRP); Network Resource Model (NRM)"
- [21] 3GPP TS 28.652: "Telecommunication management; Universal Terrestrial Radio Access Network (UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)"
- [22] 3GPP2 S.S0028-D "OAM&P for cdma2000 (Overview, 3GPP R7 Delta Specification, 3GPP2 Network Resource Model IRP)"
- [23] 3GPP TS 28.708: "Telecommunication management; Evolved Packet Core (EPC) Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)"
- [24] 3GPP TS 36.423: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN); X2 application protocol (X2AP)".
- [25] 3GPP TS 36.213: "Evolved Universal Terrestrial Radio Access (E-UTRA); Physical layer procedures".
- [26] 3GPP TS 28.625: "Telecommunication management; State Management Data Definition Integration Reference Point (IRP); Information Service (IS)".
- [27] 3GPP TS 36.413: "Evolved Universal Terrestrial Access Network (E-UTRAN); S1 Application Protocol (S1AP)".
- [28] 3GPP TS 36.443: "Evolved Universal Terrestrial Access Network (E-UTRAN); M2 Application Protocol (M2AP)".
- [29] 3GPP TS 22.011: "Service accessibility".
- [30] 3GPP TS 32.422: "Telecommunication management; Subscriber and equipment trace; Trace control and configuration management".
- [31] 3GPP TS 28.662: "Telecommunication management; Generic Radio Access Network (RAN) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".
- [32] 3GPP TS 32.662: "Telecommunication management; Configuration Management (CM); Kernel CM; Information service (IS)".
- [33] 3GPP TS 23.203: "Policy and charging control architecture".
- [34] 3GPP TS 23.207: "End-to-end Quality of Service (QoS) concept and architecture".

- [35] RFC 2474: "Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers".
- [36] 3GPP TS 45.008: "Technical Specification Group GSM/EDGE Radio Access Network; Radio subsystem link control".
- [37] 3GPP TS 32.302: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Information Service (IS)".
- [38] 3GPP TS 36.133: "Universal Terrestrial Access Network (UTRAN); Requirements for support of radio resource management".
- [39] 3GPP TS 28.657: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP); Requirements".
- [40] 3GPP TS 28.541: "Management and orchestration of 5G networks Network Resource Model (NRM); Stage 2 and stage 3".
- [41] 3GPP TS 38.300: "NR; Overall description; Stage-2".
- [42] Void.
- [43] 3GPP TS 36.463: "Evolved Universal Terrestrial Radio Access Network (E-UTRAN) and Wireless LAN (WLAN); Xw application protocol (XwAP)".

---

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 32.150 [16], TS 32.101 [1], TS 32.102 [2] and TS 21.905 [17] and the following apply.

**Association:** See definition in TS 28.622 [6].

**Network Resource Model (NRM):** See definition in TS 28.622 [6].

**eNodeB:** A logical node responsible for radio transmission/reception in one or more cells to/from the User Equipment. It terminates the S1 interface towards the EPC.

### 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TS 32.150 [16], TS 32.101 [1], TS 32.102 [2] and TS 21.905 [17] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TS 28.657 [39], TS 32.150 [16], TS 32.101 [1], TS 32.102 [2] and TS 21.905 [17], in that order.

|         |   |
|---------|---|
| DeNB    | Donor eNodeB  |
| DN      | Distinguished Name (see 3GPP TS 32.300 [4])                     |
| E-UTRA  | Evolved Universal Terrestrial Radio Access                      |
| E-UTRAN | Evolved Universal Terrestrial Radio Access Network              |
| MBSFN   | Multimedia Broadcast multicast service Single Frequency Network |
| NCR     | Neighbour Cell Relation   |
| PM      | Performance Management  |
| RDN     | Relative Distinguished Name (see 3GPP TS 32.300 [4])            |
| RN      | Relay Node  |

## 4 Model

### 4.1 Imported and associated information

#### 4.1.1 Imported information entities and local labels

| Label reference  | Local label                |
|--|----------------------------|
| 3GPP TS 28.625 [26], attribute, administrativeState        | administrativeState        |
| 3GPP TS 28.625 [26], attribute, availabilityStatus         | availabilityStatus         |
| 3GPP TS 28.625 [26], attribute, operationalState           | operationalState           |
| 3GPP TS 28.622 [6], IOC, ManagedFunction                   | ManagedFunction            |
| 3GPP TS 28.622 [6], IOC, Link                              | Link                       |
| 3GPP TS 28.708 [23], IOC, MMEFunction                      | MMEFunction                |
| 3GPP TS 28.708 [23], IOC, ExternalMMEFunction              | ExternalMMEFunction        |
| 3GPP TS 28.708 [23], IOC, ServingGwFunction                | ServingGwFunction          |
| 3GPP TS 28.708 [23], IOC, ServingGwCFunction               | ServingGwCFunction         |
| 3GPP TS 28.708 [23], IOC, ExternalServingGwCFunction       | ExternalServingGwCFunction |
| 3GPP TS 28.652 [21], IOC, UtranRelation                    | UtranRelation              |
| 3GPP TS 28.662 [31], IOC, AntennaFunction                  | AntennaFunction            |
| 3GPP TS 28.662 [31], IOC, TmaFunction                      | TmaFunction                |
| 3GPP TS 32.652 [20], IOC, GsmRelation                      | GsmRelation                |
| 3GPP2 TS S.S0028 [22], IOC, ExternalSector                 | ExternalSector             |
| 3GPP TS 28.708 [23], IOC, EP_RP_EPS                        | EP_RP_EPS                  |
| 3GPP TS 28.708 [23], IOC, QCISet                           | QCISet                     |
| 3GPP TS 28.662 [31], IOC, SectorEquipmentFunction          | SectorEquipmentFunction    |
| 3GPP TS 28.628 [5], IOC, EnergySavingProperties            | EnergySavingProperties     |
| 3GPP TS 28.541 [40], IOC, EP_X2C                           | EP_X2C                     |
| 3GPP TS 28.541 [40], IOC, EP_X2U                           | EP_X2U                     |
| 3GPP TS 28.541 [40], IOC, EP_XnC                           | EP_XnC                     |
| 3GPP TS 28.541 [40], IOC, EP_XnU                           | EP_XnU                     |
| 3GPP TS 28.541 [40], IOC, EP_NgC                           | EP_NgC                     |
| 3GPP TS 28.541 [40], IOC, EP_NgU                           | EP_NgU                     |
| 3GPP TS 28.541 [40], IOC, AMFFunction                      | AMFFunction                |
| 3GPP TS 28.541 [40], IOC, UPFFunction                      | UPFFunction                |
| 3GPP TS 28.541 [40], IOC, GNBCUCPFunction                  | GNBCUCPFunction            |
| 3GPP TS 28.541 [40], IOC, GNBCUUPFunction                  | GNBCUUPFunction            |
| 3GPP TS 28.541 [40], attribute, pLMNInfo                   | pLMNInfo                   |
| 3GPP TS 28.622 [6], IOC, EP_RP                             | EP_RP                      |
| 3GPP TS 28.541 [40], IOC, NRCellRelation                   | NRCellRelation             |
| 3GPP TS 28.541 [40], IOC, NRReqRelation                    | NRReqRelation              |
| 3GPP TS 28.541 [40], IOC, NRFrequency                      | NRFrequency                |
| 3GPP TS 28.541 [40], IOC, NRNetwork                        | NRNetwork                  |
| 3GPP TS 28.541 [40], IOC, EUTranNetwork                    | EUTranNetwork              |
| 3GPP TS 28.541 [40], attribute, cellIndividualOffset       | cellIndividualOffset       |
| 3GPP TS 28.541 [40], attribute, blockListEntry             | blockListEntry             |
| 3GPP TS 28.541 [40], attribute, blockListEntryIdleMode     | blockListEntryIdleMode     |
| 3GPP TS 28.541 [40], attribute, cellReselectionPriority    | cellReselectionPriority    |
| 3GPP TS 28.541 [40], attribute, cellReselectionSubPriority | cellReselectionSubPriority |
| 3GPP TS 28.541 [40], attribute, pMax                       | pMax                       |
| 3GPP TS 28.541 [40], attribute, qOffsetFreq                | qOffsetFreq                |
| 3GPP TS 28.541 [40], attribute, qQualMin                   | qQualMin                   |
| 3GPP TS 28.541 [40], attribute, qRxLevMin                  | qRxLevMin                  |
| 3GPP TS 28.541 [40], attribute, threshXHighP               | threshXHighP               |
| 3GPP TS 28.541 [40], attribute, threshXHighQ               | threshXHighQ               |
| 3GPP TS 28.541 [40], attribute, threshXLowP                | threshXLowP                |
| 3GPP TS 28.541 [40], attribute, threshXLowQ                | threshXLowQ                |
| 3GPP TS 28.541 [40], attribute, tReselectionEutraSfHigh    | tReselectionEutraSfHigh    |
| 3GPP TS 28.541 [40], attribute, tReselectionEutraSfMedium  | tReselectionEutraSfMedium  |

### 4.1.2 Associated information entities and local labels

| Label reference                                | Local label           |
|--|-----------------------|
| 3GPP TS 28.622 [6], IOC, <i>Top</i>            | <i>Top</i>            |
| 3GPP TS 28.622 [6], IOC, <i>ManagedElement</i> | <i>ManagedElement</i> |
| 3GPP TS 28.622 [6], IOC, <i>SubNetwork</i>     | <i>SubNetwork</i>     |

## 4.2 Class diagram

### 4.2.1 Relationships

This clause depicts the set of classes (e.g. IOCs) that encapsulates the information relevant for this IRP. This clause provides the overview of the relationships of relevant classes in UML. Subsequent clauses provide more detailed specification of various aspects of these classes.

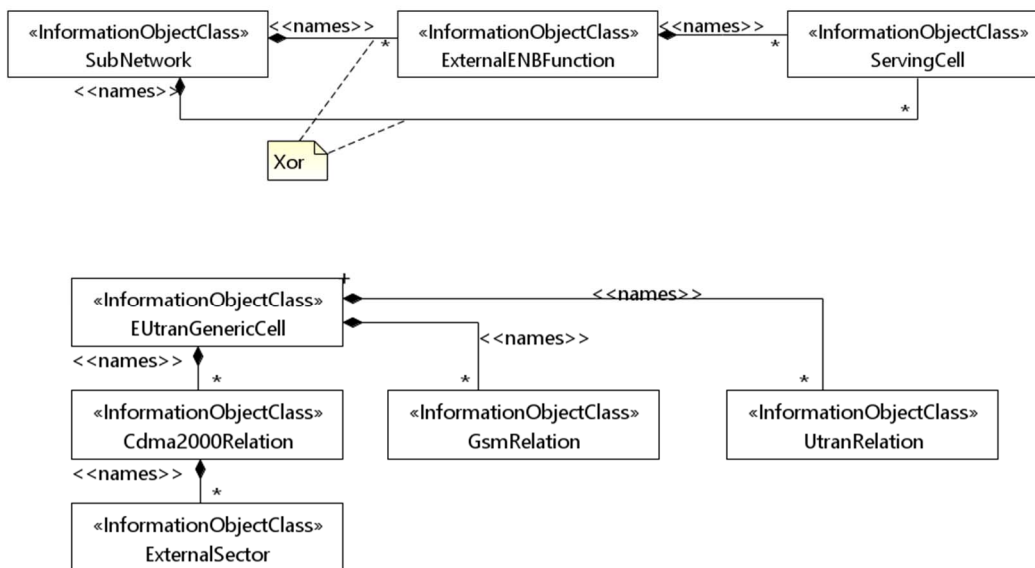


Figure 4.2.1-1: Cell relation view

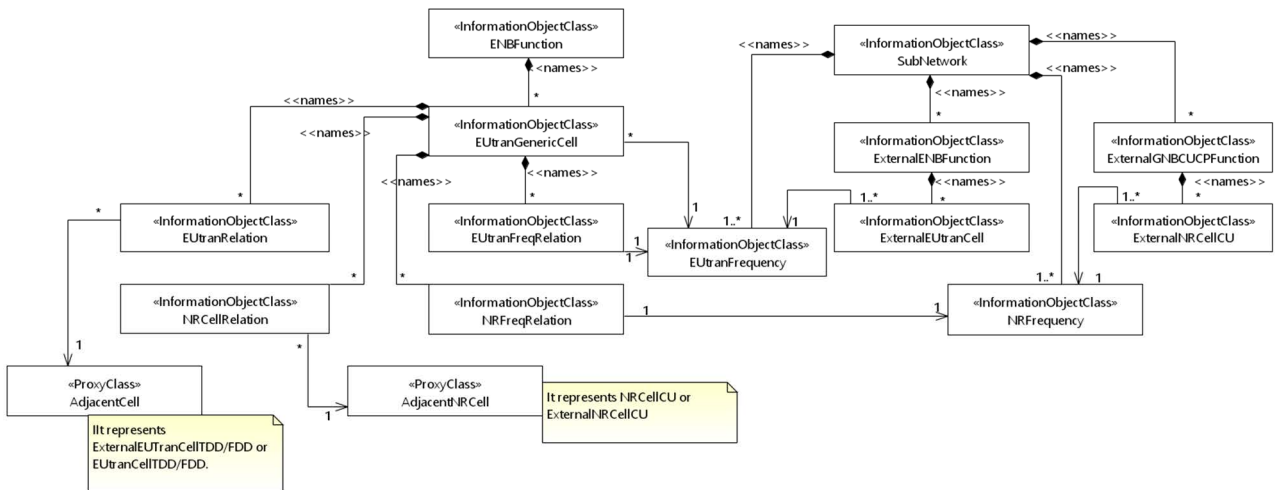


Figure 4.2.1.1-1a: Cell and frequency relation view

NOTE A: The above NRM fragment uses SubNetwork to hold both NR and LTE external entities and frequencies.

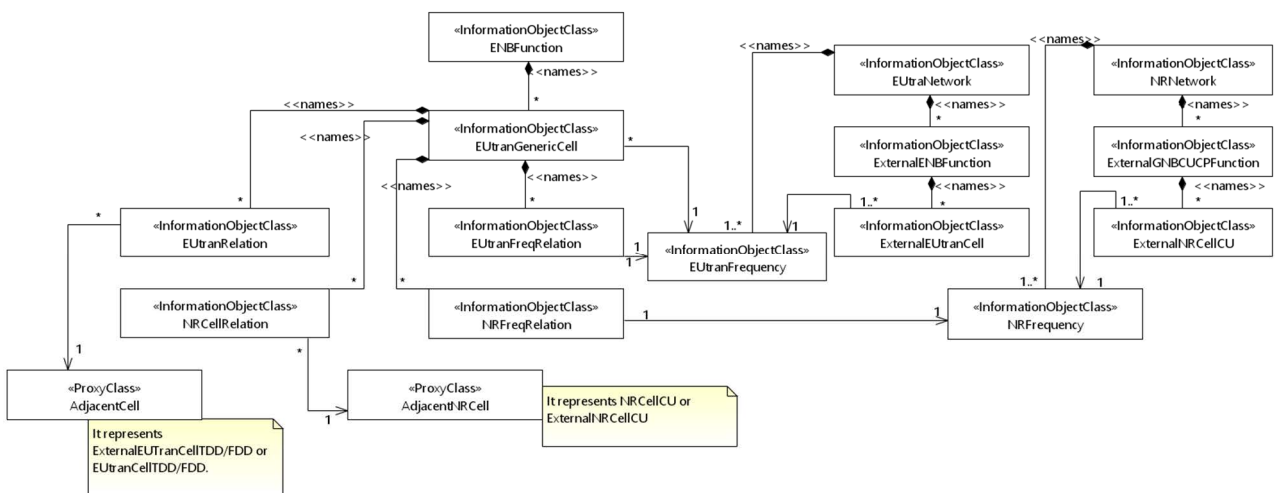
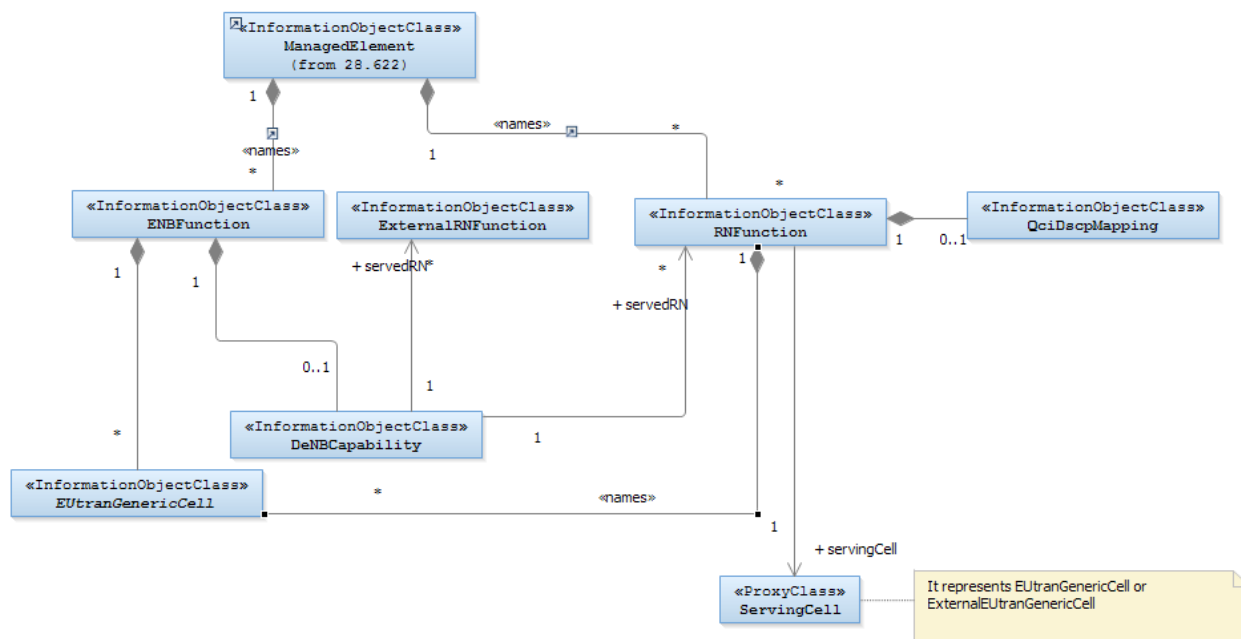


Figure 4.2.1.1-1b: Cell and frequency relation view

NOTE B: The above NRM fragment uses NRNetwork to hold NR external entities and frequency and using EUTranNetwork to hold LTE external entities and frequency. The NRNetwork and EUTranNetwork are subclasses of SubNetwork (defined in TS 28.622[6]) with no additional attributes. The reason using NRNetwork and EUTranNetwork is for a clean separation of NR external entities and frequency and LTE external entities and frequency.



NOTE 1: If an instance of the *ServesRN* association is present, then a corresponding instance of *ServedByEGC* must be present. In this case, the *ENBFunction* and *RNFunction* instances are under the management scope of the same IRPAgent.

If an instance of the *ServesExtRN* association is present, then a corresponding instance of *ServedByExtEGC* must be present. In this case, the *ENBFunction* and *RNFunction* instances are under the management scope of two different IRPAgents.

NOTE 2: The modelling of the DeNB capability as a separate IOC or as attributes of *ENBFunction* is FFS

**Figure 4.2.1-2: E-UTRAN relaying view of E-UTRAN and ng-eNB NRM**

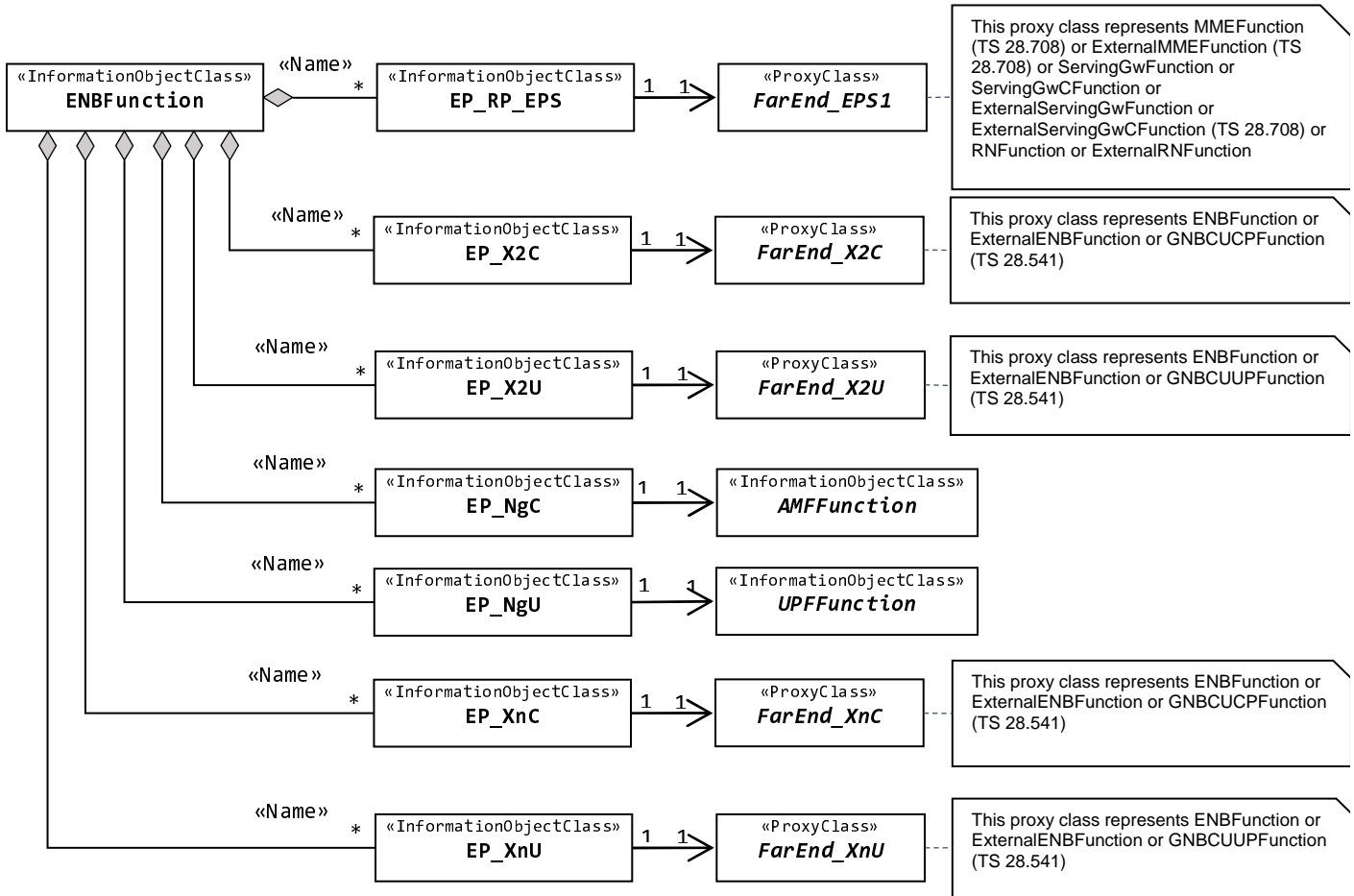
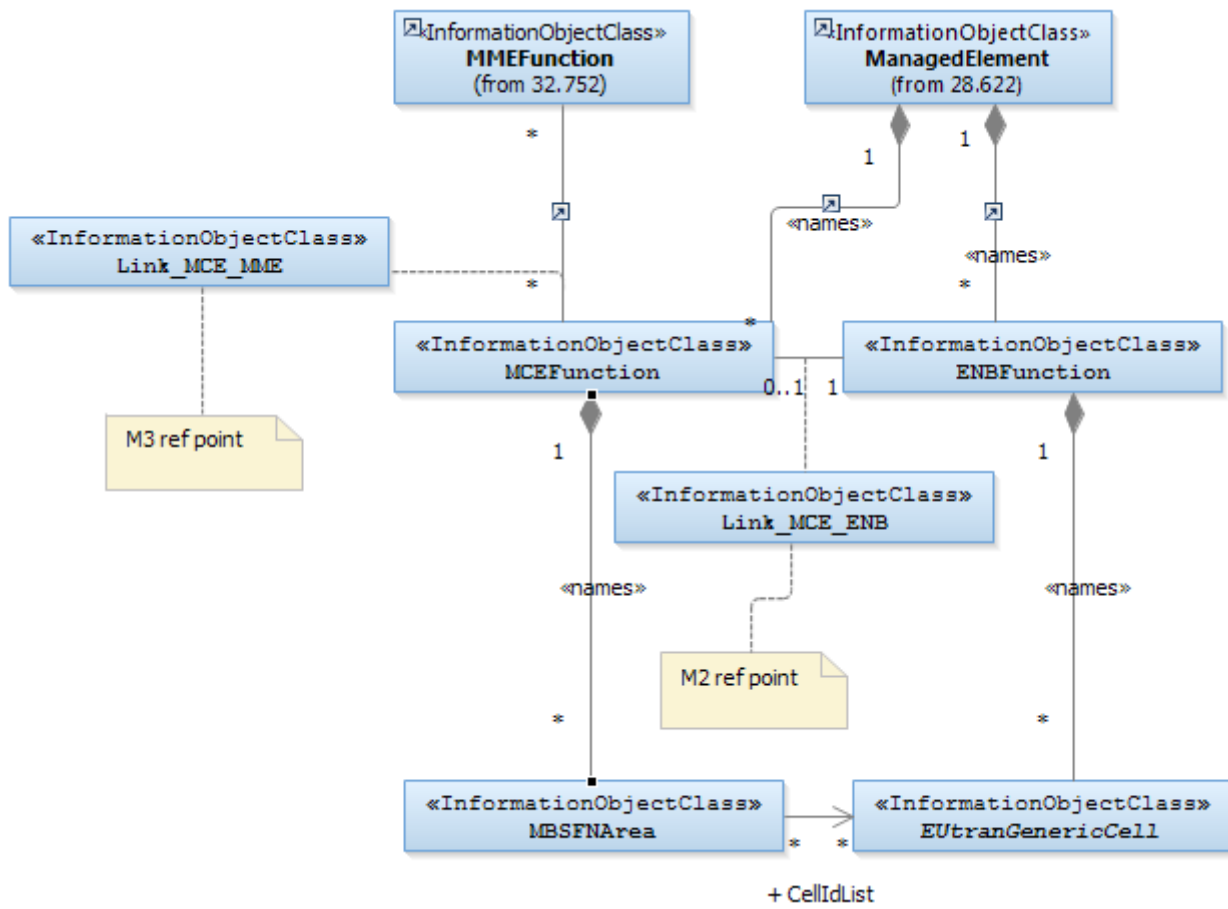


Figure 4.2.1-3: Transport view of E-UTRAN and ng-eNB NRM



**Figure 4.2.1-4: MBMS view of E-UTRAN NRM 1**

NOTE 1: This is E-UTRAN NRM containment/relationship Figure form view of MBMS when MCE and ENB belong to one Network Element.



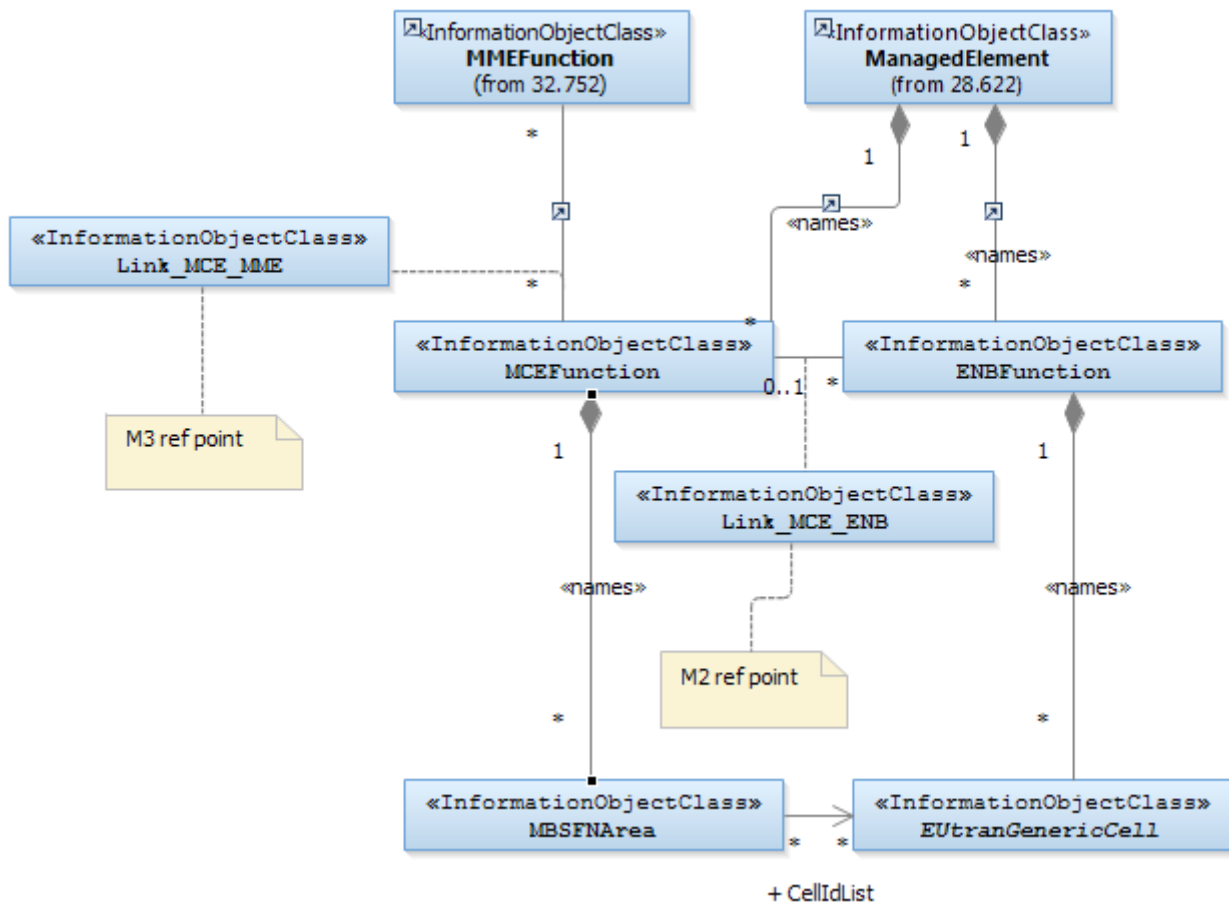


Figure 4.2.1-5: MBMS view of E-UTRAN NRM 2

NOTE 2: This is E-UTRAN NRM containment/relationship Figure form view of MBMS when MCE and ENB belong to different Network Elements.

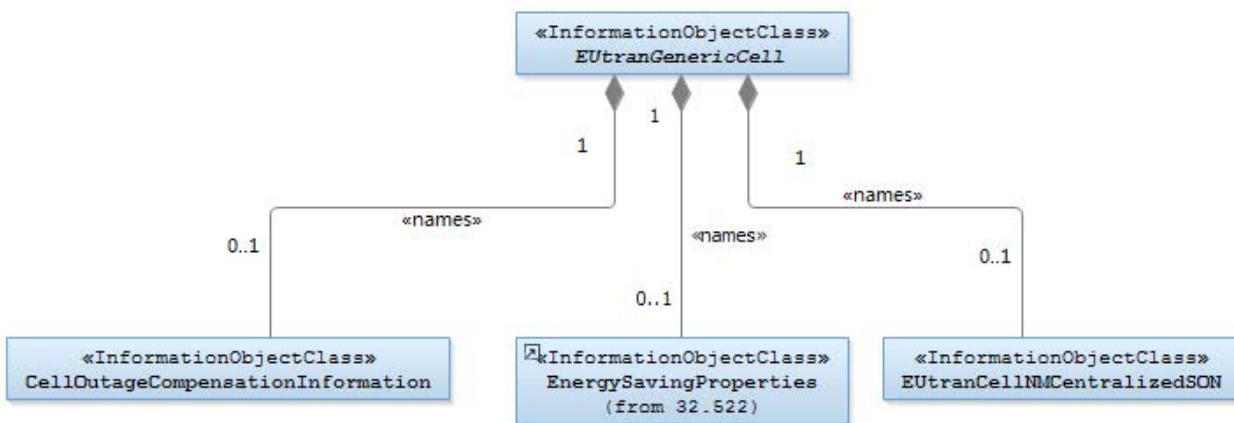


Figure 4.2.1-6: SON related Attributes NRM IOCs (Containment Relationship)

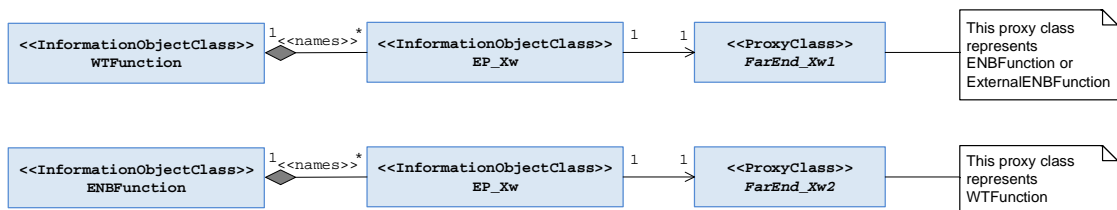


Figure 4.2.1-

7: Non-collocated LWA NRM

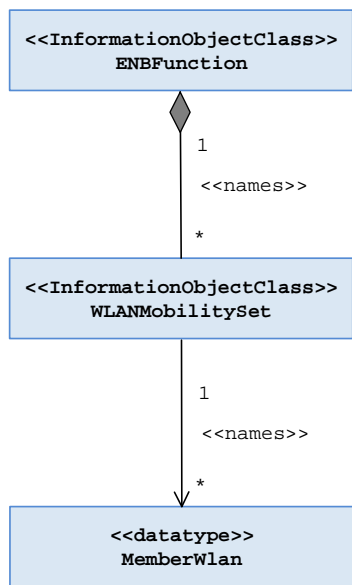
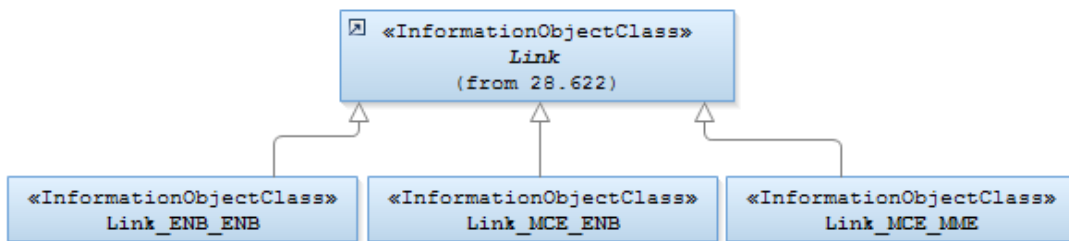
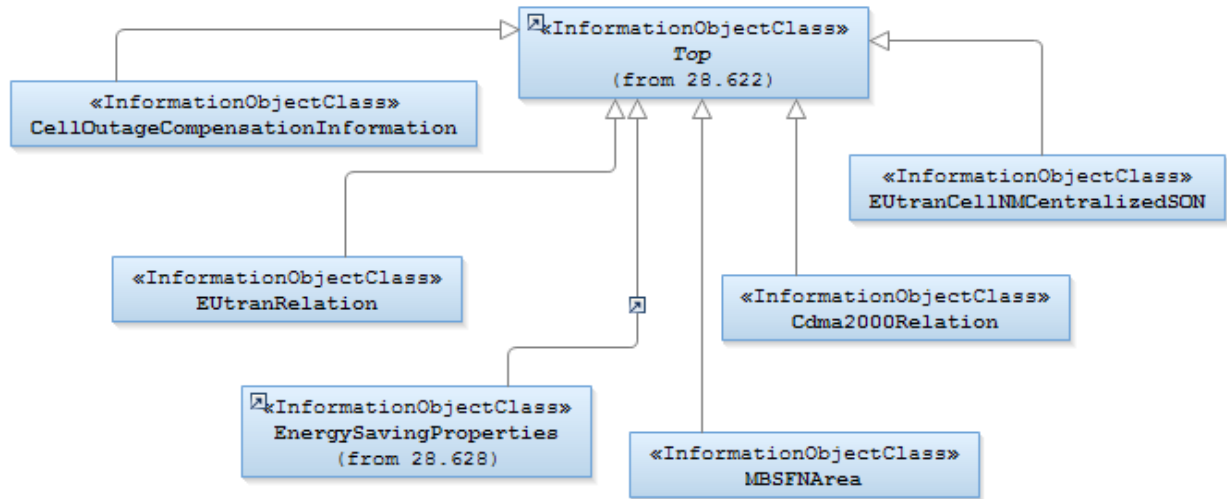
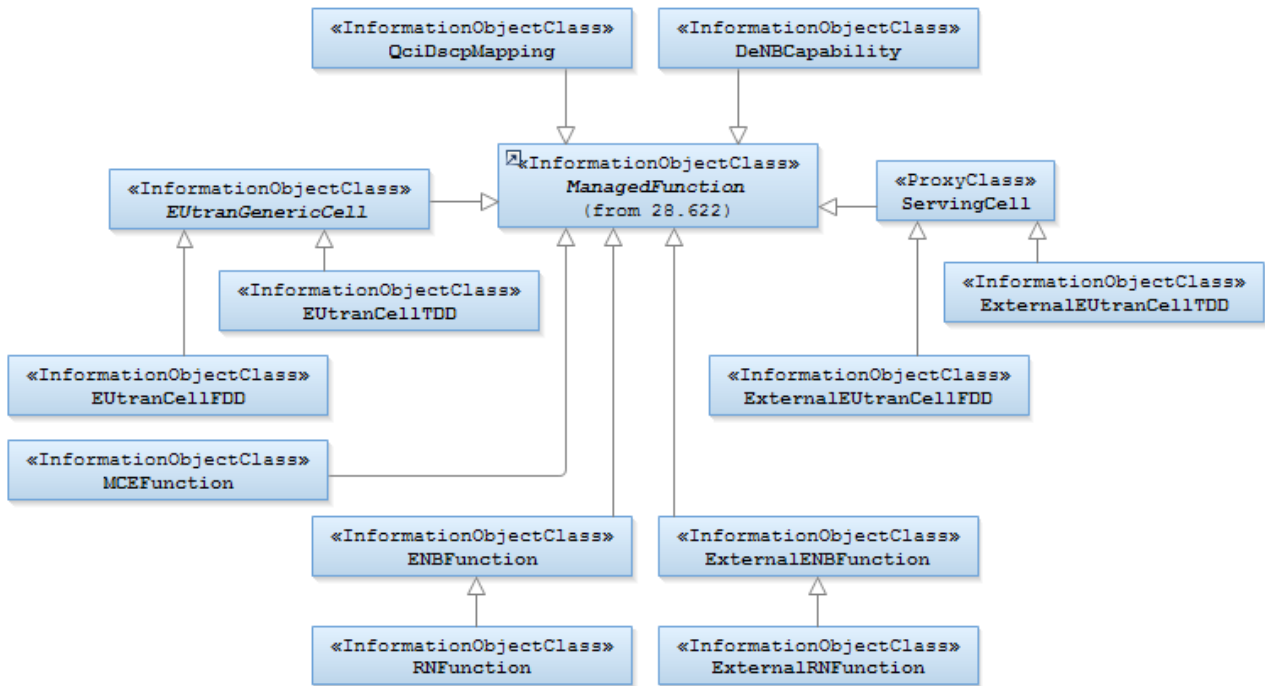


Figure 4.2.1-8: WLAN Mobility Set NRM for LWA and LWIP

### 4.2.2 Inheritance



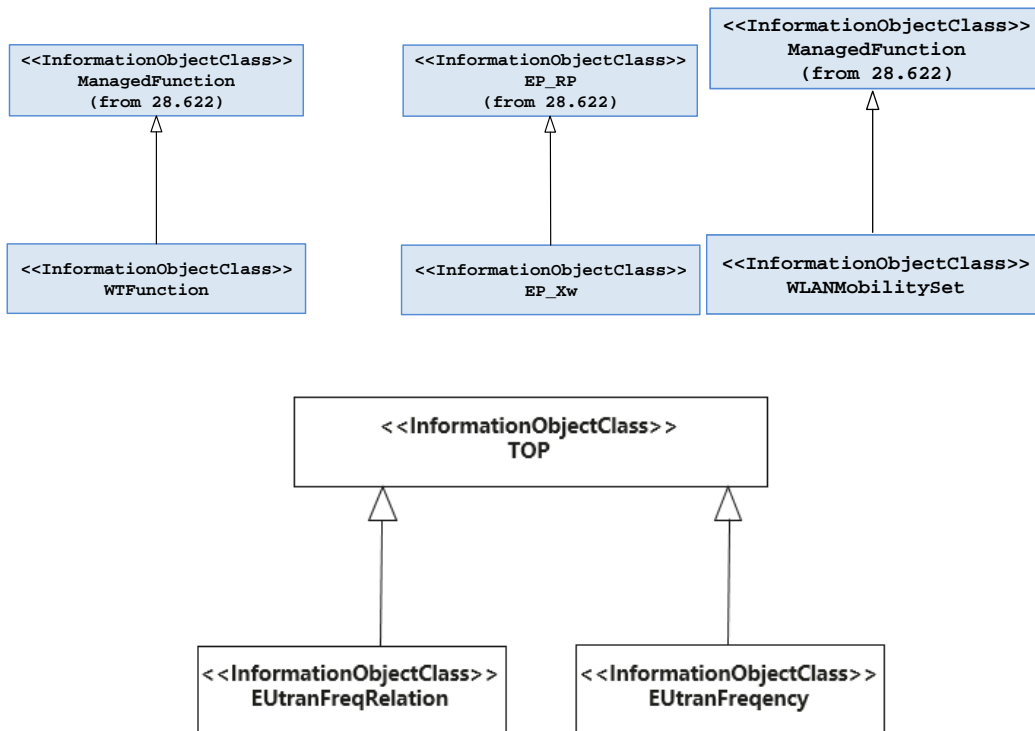


Figure 4.2.2-1: E-UTRAN NRM Inheritance Hierarchy

### 4.3 Class definitions

#### 4.3.1 ENBFunction

##### 4.3.1.1 Definition

This IOC represents eNB functionality defined in TS 36.300 [11] or ng-eNB defined in TS 38.300 [41]. For more information about the eNB, see 3GPP TS 23.002 [19]. For more information about the ng-eNB, see 3GPP TS 38.300 [41].

##### 4.3.1.2 Attributes

| Attribute name            | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|---------------------------|-------------------|------------|------------|-------------|--------------|
| intraANRSwitch            | CM                | T          | T          | F           | T            |
| iRATANRSwitch             | CM                | T          | T          | F           | T            |
| eNBId                     | M                 | T          | F          | F           | T            |
| x2BlockList               | CM                | T          | T          | F           | T            |
| x2AllowList               | CM                | T          | T          | F           | T            |
| x2HOBLOCKList             | CM                | T          | T          | F           | T            |
| x2IpAddressList           | O                 | T          | F          | F           | T            |
| tceIDMappingInfoList      | CM                | T          | T          | F           | T            |
| sharNetTceMappingInfoList | CM                | T          | T          | F           | T            |
| netListeningRSForRIBS     | CM                | T          | T          | F           | T            |
| lWIPSeGWList              | CM                | T          | T          | F           | T            |

### 4.3.1.3 Attribute constraints

| Name  | Definition  |
|---|---|
| intraANRSwitch Support Qualifier            | The condition is "ANR function is supported".   |
| iRATANRSwitch Support Qualifier             | The condition is "ANR function is supported".   |
| x2BlockList Support Qualifier               | The condition is "ANR function is supported".   |
| x2AllowList Support Qualifier               | The condition is "ANR function is supported".   |
| x2HOBBlockList Support Qualifier            | The condition is "ANR function is supported".   |
| tceIDMappingInfoList Support Qualifier      | The condition is "MDT function is supported" and only one PLMN is supported   |
| sharNetTceMappingInfoList Support Qualifier | The condition is "MDT function and several PLMNs are supported".  |
| netListeningRSForRIBS Support Qualifier     | The condition is "Radio Interface Based Synchronization function is supported".   |
| lWIPSeGWList Support Qualifier              | The IOC represents the eNB functionality defined in TS 36.300 [11], and the LWIP is supported by the represented eNB functionality. |

NOTE 1: The above mentioned SON or MDT related conditions do not apply to ng-eNB.

### 4.3.1.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.3.2 ExternalENBFunction

### 4.3.2.1 Definition

This IOC represents an external eNB functionality. For more information about the eNB, see 3GPP TS 23.002 [19].

### 4.3.2.2 Attributes

| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|----------------|-------------------|------------|------------|-------------|--------------|
| eNBId          | M                 | T          | T          | F           | T            |

### 4.3.2.3 Attribute constraints

None.

### 4.3.2.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.3.3 EUTranGenericCell

### 4.3.3.1 Definition

This abstract IOC represents the common properties of an E-UTRAN generic cell provided by eNB function or an NG-RAN generic cell provided by ng-eNB function. For more information about E-UTRAN cells, see 3GPP TS 23.401 [9]. For more information about NG-RAN cells, see 3GPP TS 38.300 [41].

## 4.3.3.2 Attributes

| Attribute name                   | Support Qualifier | isReadable | isWritable     | isInvariant | isNotifiable   |
|----------------------------------|-------------------|------------|----------------|-------------|----------------|
| cellLocalId                      | M                 | T          | T              | F           | T              |
| cellLocalIdList                  | CM                | T          | T              | F           | T              |
| cellSize                         | M                 | T          | T              | F           | T              |
| plmnIdList                       | CM                | T          | T              | F           | T              |
| cellAccessInfoList               | O                 | T          | T              | F           | T              |
| tac                              | M                 | T          | T              | F           | T              |
| pci                              | M                 | T          | T (see Note 4) | F           | T              |
| pciList                          | CM                | T          | T              | F           | T              |
| maximumTransmissionPower         | M                 | T          | T(see Note 5)  | F           | T              |
| nbIoTcellFlag (see Note 3)       | CM                | T          | F              | F           | T              |
| referenceSignalPower             | M                 | T          | T              | F           | T              |
| pb                               | M                 | T          | T              | F           | T              |
| partOfSectorPower                | CM                | T          | T              | F           | T              |
| relatedTmaList                   | CO                | T          | F              | F           | T              |
| relatedAntennaList               | CO                | T          | F              | F           | T              |
| relatedSector                    | CM                | T          | F              | F           | T              |
| cellResvInfo                     | CM                | T          | T              | F           | T              |
| allowedAccessClasses             | M                 | T          | T              | F           | T              |
| isChangeForEnergySavingAllowed   | CM                | T          | T              | F           | T              |
| operationalState (see Note 1)    | CM                | T          | F              | F           | T (see Note 2) |
| administrativeState (see Note 1) | CM                | T          | F              | F           | T (see Note 2) |
| availabilityStatus (see Note 1)  | CM                | T          | F              | F           | T (see Note 2) |
| ngranCellFlag                    | CM                | T          | F              | F           | T              |
| plMNInfoList                     | CM                | T          | T              | F           | T              |

Note 1: No state propagation is implied.

Note 2: The attribute value change is conveyed by the notifyStateChange notification.

Note 3: For NB-IoT, as indicated in the relevant subclauses in TS 36.300 [11], a number of E-UTRA protocol functions supported by all UEs are not used for NB-IoT and need not be supported by eNBs and UEs only using NB-IoT. The attributes cellLocalId, tac, pci, maximumTransmissionPower are Mandatory for NB-IoT cell, Whether other attributes are needed for NB-IoT cell are out of scope of this document.

Note 4: The attribute PCI is writable when the NM-Centralized PCI assignment (see TS 32.500 [15] clause 6.1.6) is supported.

Note 5: The attribute maximumTransmissionPower is writable when IOC SectorEquipmentFunction is not used.

## 4.3.3.3 Attribute constraints

| Name                                    | Definition  |
|---|---|
| cellLocalIdList CM Support Qualifier    | Active Antenna System management function is supported  |
| plmnIdList CM Support Qualifier         | The ng-eNB (see TS 38.300 [41]) function is not supported.  |
| pciList CM Support Qualifier            | Either EM-Centralized or Distributed PCI assignment (see TS 32.500 [15] clause 6.1.6) is supported. |
| partOfSectorPower CM support qualifier  | The IOC SectorEquipmentFunction is used.  |
| relatedTmaList CO Support Qualifier     | The IOC SectorEquipmentFunction is not used.  |
| relatedAntennaList CO Support Qualifier | The IOC SectorEquipmentFunction is not used.  |
| relatedSector CM Support Qualifier      | The IOC SectorEquipmentFunction is used.  |

|   |  |
|---|--|
| cellResvInfo CM Support Qualifier                   | The MBSFN Transmission (see TS 36.300 [11] subclause 15.3.3) is supported.                                       |
| isChangeForEnergySavingAllowed CM Support Qualifier | The energy saving functionality is supported and uses distributed architecture.                                  |
| nbIoTcellFlag CM Support Qualifier                  | The NB-IoT (see TS 36.300 [11]) is supported.  |
| ngrancellFlag CM Support Qualifier                  | The ng-eNB (see TS 38.300 [41]) function is supported.   |
| plmnInfoList CM Support Qualifier                   | The condition is "ng-eNB (see TS 38.300 [41]) function is supported" and "network slicing feature is supported". |

#### 4.3.3.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC. In addition, the following set of notification, defined in 3GPP TS 32.662 [32], is also valid.

| Name              | Qualifier | Notes |
|-------------------|-----------|-------|
| notifyStateChange | O         |       |

### 4.3.4 ExternalEUTranGenericCell

#### 4.3.4.1 Definition

This abstract IOC represents the properties of an E-UTRAN generic cell controlled by another IRPAgent. This IOC contains necessary attributes for inter-system and intra-system handover. It also contains a subset of the attributes of related IOCs controlled by another IRPAgent. The way to maintain consistency between the attribute values of these IOCs is outside the scope of the present document.

#### 4.3.4.2 Attributes

| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|----------------|-------------------|------------|------------|-------------|--------------|
| Ppci           | M                 | T          | T          | F           | T            |
| plmnIdList     | M                 | T          | T          | F           | T            |
| cellLocalId    | M                 | T          | T          | F           | T            |
| eNBId          | CM                | T          | T          | F           | T            |

#### 4.3.4.3 Attribute constraints

| Name                       | Definition  |
|----------------------------|---|
| eNBId CM Support Qualifier | This instance of ExternalEUTranGenericCell IOC is directly contained by SubNetwork. |

#### 4.3.4.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.5 EUTranCellFDD

#### 4.3.5.1 Definition

This IOC represents the properties of E-UTRAN FDD cell provided by eNB or NG-RAN FDD cell provided by ng-eNB..

### 4.3.5.2 Attributes

| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
|----------------|-------------------|------------|------------|-------------|--------------|
| earfcnDl       | M                 | T          | T          | F           | T            |
| earfcnUl       | M                 | T          | T          | F           | T            |

### 4.3.5.3 Attribute constraints

None.

### 4.3.5.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.3.6 ExternalEUTranCellFDD

### 4.3.6.1 Definition

This IOC represents the common properties of external E-UTRAN FDD cell provided by eNB or NG-RAN FDD cell provided by ng-eNB.

### 4.3.6.2 Attributes

| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
|----------------|-------------------|------------|------------|-------------|--------------|
| earfcnDl       | M                 | T          | T          | F           | T            |
| earfcnUl       | M                 | T          | T          | F           | T            |

### 4.3.6.3 Attribute constraints

None.

### 4.3.6.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.3.7 EUTranCellTDD

### 4.3.7.1 Definition

This IOC represents the properties of E-UTRAN cell TDD provided by eNB or NG-RAN TDD cell provided by ng-eNB.

### 4.3.7.2 Attributes

| Attribute name    | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
|-------------------|-------------------|------------|------------|-------------|--------------|
| earfcn            | M                 | T          | T          | F           | T            |
| sfAssignment      | M                 | T          | T          | F           | T            |
| specialSfPatterns | M                 | T          | T          | F           | T            |

### 4.3.7.3 Attribute constraints

None.



#### 4.3.7.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.8 ExternalEUTranCellTDD

#### 4.3.8.1 Definition

This IOC represents the common properties of external E-UTRAN cell TDD provided by eNB or NG-RAN TDD cell provided by ng-eNB.

| 4.3.8.2 Attributes Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
|-----------------------------------|-------------------|------------|------------|-------------|--------------|
| earfcn                            | M                 | T          | T          | F           | T            |

#### 4.3.8.3 Attribute constraints

None.

#### 4.3.8.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.9 EUTranRelation

#### 4.3.9.1 Definition

This IOC represents a NCR from a source cell to a target cell, where the target cell is a EUTranGenericCell or ExternalEUTranGenericCell instance.

The source cell can be an EUTranGenericCell instance. This is the case for an Intra-E-UTRAN NCR.

The source cell can be a UtranGenericCell instance. This is the case for Inter-RAT NCR from UTRAN to E-UTRAN. See 3GPP TS 28.652 [21].

The source cell can be a GsmCell instance. This is the case for Inter-RAT NCR from GERAN to E-UTRAN. See 3GPP TS 32.652 [20].

NCRs are unidirectional.

#### 4.3.9.2 Attributes

| Attribute name                   | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
|----------------------------------|-------------------|------------|------------|-------------|--------------|
| id                               | M                 | T          | F          | T           | F            |
| tCI                              | O                 | T          | T          | F           | T            |
| isRemoveAllowed                  | CM                | T          | T          | F           | T            |
| isHOAllowed                      | CM                | T          | T          | F           | T            |
| isICICInformationSendAllowed     | CM                | T          | T          | F           | T            |
| isLBAAllowed                     | CM                | T          | T          | F           | T            |
| isESCoveredBy                    | CM                | T          | T          | F           | T            |
| qOffset                          | CM                | T          | T          | F           | T            |
| cellIndividualOffset             | CM                | T          | F          | F           | T            |
| <b>Attribute related to role</b> |                   |            |            |             |              |
| adjacentCell                     | M                 | T          | T          | F           | T            |

### 4.3.9.3 Attribute constraints

| Name   | Definition   |
|--|--|
| isRemoveAllowed Support Qualifier              | The condition is "ANR function is supported in the source cell, and the source cell is an <code>EUtranGenericCell</code> or a <code>UtranGenericCell</code> ". |
| isHOAllowed Support Qualifier                  | The condition is "ANR function is supported in the source cell, and the source cell is an <code>EUtranGenericCell</code> or a <code>UtranGenericCell</code> ". |
| isICICInformationSendAllowed Support Qualifier | The condition is "ICIC function is supported".   |
| isLBAllowed Support Qualifier                  | The condition is "LB function is supported".   |
| isESCoveredBy Support Qualifier                | The condition is "Energy Saving function is supported".  |
| qOffset Support Qualifier                      | The condition is "Neither an EM-centralized nor a distributed SON function support the SON use cases for which this attribute is relevant (see §6.5.1)".       |
| cellIndividualOffset Support Qualifier         | The condition is "HOO function is supported" or "Load Balancing Optimization function is supported".   |

### 4.3.9.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.3.10 Link\_ENB\_ENB

### 4.3.10.1 Definition

This IOC represents the link between two `ENBFunction`.

### 4.3.10.2 Attributes

None.

### 4.3.10.3 Attribute constraints

None.

### 4.3.10.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.3.11 Cdma2000Relation

### 4.3.11.1 Definition

This IOC represents a NCR from one `EUtranGenericCell` to a CDMA2000 sector. NCRs are directional.

See 3GPP2 TS S.S0028 [22]

### 4.3.11.2 Attributes

| Attribute name                   | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
|----------------------------------|-------------------|------------|------------|-------------|--------------|
| id                               | M                 | T          | F          | T           | F            |
| <b>Attribute related to role</b> |                   |            |            |             |              |
| adjacentSector                   | M                 | T          | F          | F           | T            |

#### 4.3.11.3 Attribute constraints

None.

#### 4.3.11.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.12 MCEFunction

#### 4.3.12.1 Definition

This IOC represents MCE functionality. For more information about the MCE, see 3GPP TS 36.300 [11].

#### 4.3.12.2 Attributes

None.

#### 4.3.12.3 Attribute constraints

None.

#### 4.3.12.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.13 MBSFNArea

#### 4.3.13.1 Definition

This IOC represents MBSFN Area. For more information about MBSFN Area, see 3GPP TS 36.300 [11].

#### 4.3.13.2 Attributes

| Attribute name                   | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
|----------------------------------|-------------------|------------|------------|-------------|--------------|
| id                               | M                 | T          | F          | T           | F            |
| mbsfnAreaId                      | M                 | T          | T          | F           | T            |
| <b>Attribute related to role</b> |                   |            |            |             |              |
| cellIdList                       | M                 | T          | T          | F           | T            |

#### 4.3.13.3 Attribute constraints

None.

#### 4.3.13.4 Notifications

| Name                       | Qualifier                               | Notes |
|----------------------------|---|-------|
| notifyAttributeValueChange | See Kernel CM IRP (3GPP TS 32.662 [32]) |       |
| notifyObjectCreation       | See Kernel CM IRP (3GPP TS 32.662 [32]) |       |
| notifyObjectDeletion       | See Kernel CM IRP (3GPP TS 32.662 [32]) |       |

#### 4.3.14 Link\_MCE\_ENB

##### 4.3.14.1 Definition

This IOC models the M2 reference point as defined in TS 36.300 [11].

##### 4.3.14.2 Attributes

None.

##### 4.3.14.3 Attribute constraints

None.

##### 4.3.14.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

#### 4.3.15 Link\_MCE\_MME

##### 4.3.15.1 Definition

This IOC models the M3 reference point as defined in TS 36.300 [11].

##### 4.3.15.2 Attributes

None.

##### 4.3.15.3 Attribute constraints

None.

##### 4.3.15.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

#### 4.3.16 RNFunction

##### 4.3.16.1 Definition

This IOC represents Relay Node (RN) functionality. For more information about RN, see 3GPP TS 36.300 [11].

### 4.3.16.2 Attributes

| Attribute name                   | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
|----------------------------------|-------------------|------------|------------|-------------|--------------|
| candidateDeNBCells               | M                 | T          | T          | F           | T            |
| <b>Attribute related to role</b> |                   |            |            |             |              |
| servingCell                      | M                 | T          | T          | F           | T            |

### 4.3.16.3 Attribute constraints

None.

### 4.3.16.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.3.17 ExternalRNFunction

### 4.3.17.1 Definition

This IOC represents the properties of a Relay Node (RN) controlled by another IRPAgent. For more information about RN, see 3GPP TS 36.300 [11].

### 4.3.17.2 Attributes

None.

### 4.3.17.3 Attribute constraints

None.

### 4.3.17.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.3.18 DeNBCapability

### 4.3.18.1 Definition

This IOC represents the capability for an eNodeB to act as a Donor eNodeB (DeNB) functionality. For more information about the DeNB, see 3GPP TS 36.300 [11].

### 4.3.18.2 Attributes

| Attribute name                   | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
|----------------------------------|-------------------|------------|------------|-------------|--------------|
| maxNbrRNAllowed                  | M                 | T          | T          | F           | T            |
| <b>Attribute related to role</b> |                   |            |            |             |              |
| servedRN                         | M                 | T          | T          | F           | T            |

### 4.3.18.3 Attribute constraints

None.

### 4.3.18.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.3.19 CellOutageCompensationInformation

### 4.3.19.1 Definition

This IOC represents information relevant in case of a Cell Outage Compensation taking place.

### 4.3.19.2 Attributes

| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|----------------|-------------------|------------|------------|-------------|--------------|
| id             | M                 | T          | F          | T           | F            |
| cOCStatus      | M                 | T          | F          | F           | T            |
| isCOAllowed    | M                 | T          | T          | F           | T            |

### 4.3.19.3 Attribute constraints

None.

### 4.3.19.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, with the addition that `notifyAttributeValueChange` shall be supported (Support Qualifier M).

## 4.3.20 QciDscpMapping

### 4.3.20.1 Definition

This IOC represents a set of mapping between QCI and DSCP.

### 4.3.20.2 Attributes

| Attribute Name     | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|--------------------|-------------------|------------|------------|-------------|--------------|
| qciDscpMappingList | M                 | T          | T          | F           | T            |

### 4.3.20.3 Attribute constraints

None.

### 4.3.20.4 Notifications

| Name                                    | Qualifier                               | Notes |
|---|---|-------|
| <code>notifyAttributeValueChange</code> | See Kernel CM IRP (3GPP TS 32.662 [32]) |       |
| <code>notifyObjectCreation</code>       | See Kernel CM IRP (3GPP TS 32.662 [32]) |       |
| <code>notifyObjectDeletion</code>       | See Kernel CM IRP (3GPP TS 32.662 [32]) |       |

## 4.3.21 EUTranCellNMCentralizedSON

### 4.3.21.1 Definition

This abstract IOC represents the properties of an E-UTRAN generic cell which relate to SON functions. Its purpose is to enable configuration and tuning of the cell behaviour by the operator for SON functions which are not (yet) implemented in the eNodeB. NMS level SON should consider when configuring and tuning the cell the correlation of different attributes to optimise the eNodeB and network performance. For more information about cells, see 3GPP TS 23.401 [9].

#### 4.3.21.2 Attributes

| Attribute name                     | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|------------------------------------|-------------------|------------|------------|-------------|--------------|
| id                                 | M                 | T          | F          | T           | F            |
| a1ThresholdRsrp                    | CM                | T          | T          | F           | T            |
| a1ThresholdRsrq                    | CM                | T          | T          | F           | T            |
| a2ThresholdRsrp                    | CM                | T          | T          | F           | T            |
| a2ThresholdRsrq                    | CM                | T          | T          | F           | T            |
| a3Offset                           | CM                | T          | T          | F           | T            |
| a4ThresholdRsrp                    | CM                | T          | T          | F           | T            |
| a4ThresholdRsrq                    | CM                | T          | T          | F           | T            |
| a5Threshold1Rsrp                   | CM                | T          | T          | F           | T            |
| a5Threshold1Rsrq                   | CM                | T          | T          | F           | T            |
| b1ThresholdUtraRscp                | CM                | T          | T          | F           | T            |
| b1ThresholdUtraEcN0                | CM                | T          | T          | F           | T            |
| b1ThresholdGeran                   | CM                | T          | T          | F           | T            |
| b1ThresholdCdma2000                | CM                | T          | T          | F           | T            |
| b2Threshold1Rsrp                   | CM                | T          | T          | F           | T            |
| b2Threshold1Rsrq                   | CM                | T          | T          | F           | T            |
| b2Threshold2UtraRscp               | CM                | T          | T          | F           | T            |
| b2Threshold2UtraEcN0               | CM                | T          | T          | F           | T            |
| b2Threshold2Geran                  | CM                | T          | T          | F           | T            |
| b2Threshold2Cdma2000               | CM                | T          | T          | F           | T            |
| commonChannelPowerOffset           | CM                | T          | T          | F           | T            |
| configurationIndex                 | CM                | T          | T          | F           | T            |
| contentionResolutionTimer          | CM                | T          | T          | F           | T            |
| hysteresisEutraA1                  | CM                | T          | T          | F           | T            |
| hysteresisEutraA2                  | CM                | T          | T          | F           | T            |
| hysteresisEutraA3                  | CM                | T          | T          | F           | T            |
| hysteresisEutraA4                  | CM                | T          | T          | F           | T            |
| hysteresisEutraA5                  | CM                | T          | T          | F           | T            |
| hysteresisIratB1                   | CM                | T          | T          | F           | T            |
| hysteresisIratB2                   | CM                | T          | T          | F           | T            |
| numberOfRaPreambles                | CM                | T          | T          | F           | T            |
| preambleInitialReceivedTargetPower | CM                | T          | T          | F           | T            |
| preambleTransMax                   | CM                | T          | T          | F           | T            |
| pMax                               | CM                | T          | T          | F           | T            |
| powerRampingStep                   | CM                | T          | T          | F           | T            |
| qHyst                              | CM                | T          | T          | F           | T            |
| qOffsetUtra                        | CM                | T          | T          | F           | T            |
| qOffsetGeran                       | CM                | T          | T          | F           | T            |
| qOffsetCdma2000                    | CM                | T          | T          | F           | T            |
| qQualMinUtra                       | CM                | T          | T          | F           | T            |
| qRxLevMinEutraSib1                 | CM                | T          | T          | F           | T            |
| qRxLevMinEutraSib3                 | CM                | T          | T          | F           | T            |
| qRxLevMinGeran                     | CM                | T          | T          | F           | T            |
| qRxLevMinUtra                      | CM                | T          | T          | F           | T            |
| responseWindowSize                 | CM                | T          | T          | F           | T            |
| rootSequenceIndex                  | CM                | T          | T          | F           | T            |
| sIntraSearch                       | CM                | T          | T          | F           | T            |
| sizeOfRAPreamblesGroupA            | CM                | T          | T          | F           | T            |
| timeToTriggerEutraA1               | CM                | T          | T          | F           | T            |
| timeToTriggerEutraA2               | CM                | T          | T          | F           | T            |
| timeToTriggerEutraA3               | CM                | T          | T          | F           | T            |
| timeToTriggerEutraA4               | CM                | T          | T          | F           | T            |
| timeToTriggerEutraA5               | CM                | T          | T          | F           | T            |
| timeToTriggerIratB1                | CM                | T          | T          | F           | T            |
| timeToTriggerIratB2                | CM                | T          | T          | F           | T            |
| tReselectionCdma2000               | CM                | T          | T          | F           | T            |
| tReselectionEutra                  | CM                | T          | T          | F           | T            |
| tReselectionGeran                  | CM                | T          | T          | F           | T            |
| tReselectionUtra                   | CM                | T          | T          | F           | T            |
| tStoreUeContext                    | CM                | T          | T          | F           | T            |



#### 4.3.21.3 Attribute constraints

| Name                   | Definition   |
|------------------------|--|
| All Support Qualifiers | The condition is "Neither an EM-centralized nor a distributed SON function support the SON use cases for which this attribute is relevant (see §6.5.1)". |

#### 4.3.21.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.22 WtFunction

#### 4.3.22.1 Definition

This IOC represents WT functionality defined in TS 36.300 [11].

#### 4.3.22.2 Attributes

| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|----------------|-------------------|------------|------------|-------------|--------------|
| wLANInfoList   | M                 | T          | T          | F           | T            |

#### 4.3.22.3 Attribute constraints

None.

#### 4.3.22.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.23 EP\_Xw

#### 4.3.23.1 Definition

This IOC represents the end point of Xw reference point defined in TS 36.300 [11].

#### 4.3.23.2 Attributes

No additional attributes to the ones inherited from the IOC EP\_RP defined in TS 28.622 [6].

#### 4.3.23.3 Attribute constraints

None.

#### 4.3.23.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.24 WLANMobilitySet

#### 4.3.24.1 Definition

This IOC represents the managed WLAN mobility set for LWA and LWIP. For more information about the WLAN mobility set, see 3GPP TS 36.300 [11].

#### 4.3.24.2 Attributes

| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|----------------|-------------------|------------|------------|-------------|--------------|
|                |                   |            |            |             |              |

#### 4.3.24.3 Attribute constraints

None.

#### 4.3.24.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.25 MemberWLAN <<datatype>>

#### 4.3.25.1 Definition

This <<datatype>> represents the information about a member WLAN of a WLAN mobility set.

#### 4.3.25.2 Attributes

| Attribute name  | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|-----------------|-------------------|------------|------------|-------------|--------------|
| wLANId          | M                 | T          | T          | F           | T            |
| wLANGeoLocation | O                 | T          | T          | F           | T            |
| isLWASupported  | M                 | T          | T          | F           | T            |
| isLWIPSupported | M                 | T          | T          | F           | T            |

#### 4.3.25.3 Attribute constraints

None.

#### 4.3.25.4 Notifications

The subclause 4.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 4.3.26 PLMNId <<dataType>>

#### 4.3.26.1 Definition

This <<dataType>> represents the information of a PLMN identification.

#### 4.3.26.2 Attributes

| Attribute name | Support Qualifier | isReadable | isWritable | isInvariant | isNotifiable |
|----------------|-------------------|------------|------------|-------------|--------------|
| mCC            | M                 | T          | T          | F           | T            |
| mNC            | M                 | T          | T          | F           | T            |

#### 4.3.26.3 Attribute constraints

None.

#### 4.3.26.4 Notifications

The subclause 4.5 of the <<IOC>> using this <<dataType>> as one of its attributes, shall be applicable.

### 4.3.27 EUTranFreqRelation

#### 4.3.27.1 Definition

This IOC, together with the target EUTranFrequency, represents the frequency properties applicable to the referencing cell relation.

#### 4.3.27.2 Attributes

| Attribute name                   | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
|----------------------------------|-------------------|------------|------------|-------------|--------------|
| cellIndividualOffset             | O                 | T          | T          | F           | T            |
| blockListEntry                   | O                 | T          | T          | F           | T            |
| blockListEntryIdleMode           | O                 | T          | T          | F           | T            |
| cellReselectionPriority          | O                 | T          | T          | F           | T            |
| cellReselectionSubPriority       | O                 | T          | T          | F           | T            |
| pMax                             | O                 | T          | T          | F           | T            |
| qOffsetFreq                      | O                 | T          | T          | F           | T            |
| qQualMin                         | O                 | T          | T          | F           | T            |
| qRxLevMin                        | M                 | T          | T          | F           | T            |
| threshXHighP                     | M                 | T          | T          | F           | T            |
| threshXHighQ                     | CM                | T          | T          | F           | T            |
| threshXLowP                      | M                 | T          | T          | F           | T            |
| threshXLowQ                      | CM                | T          | T          | F           | T            |
| tReselectionEutra                | M                 | T          | T          | F           | T            |
| tReselectionEutraSfHigh          | O                 | T          | T          | F           | T            |
| tReselectionEutraSfMedium        | O                 | T          | T          | F           | T            |
| <b>attribute related to role</b> |                   |            |            |             |              |
| eUtraFrequencyRef                | M                 | T          | T          | F           | T            |

#### 4.3.27.3 Attribute constraints

| Name                                   | Definition   |
|--|--|
| threshXHighQ <b>Support Qualifiers</b> | Condition: The Struct Member threshServingLowQ in SIB3 is used in systemInformationBlockType3. |

#### 4.3.27.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

### 4.3.28 EUTranFrequency

#### 4.3.28.1 Definition

This IOC represents certain E-UTRAN frequency properties.

#### 4.3.28.2 Attributes

| Attribute name         | Support Qualifier | isReadable | isWritable | isInvariant | isNotifyable |
|------------------------|-------------------|------------|------------|-------------|--------------|
| earfcnDL               | M                 | T          | T          | F           | T            |
| multiBandInfoListEutra | M                 | T          | F          | F           | T            |

#### 4.3.28.3 Attribute constraints

None.

#### 4.3.28.4 Notifications

The common notifications defined in subclause 4.5 are valid for this IOC, without exceptions or additions.

## 4.4 Attribute definitions

### 4.4.1 Attribute properties

| Attribute Name  | Documentation and Allowed Values   | Properties   |
|-----------------|--|--|
| a1ThresholdRsrp | RSRP Threshold to be used in evaluation of EUTRA measurement report triggering condition for event a1. Actual value is IE value -140 dBm. Corresponds to parameter a1-Threshold.Threshold-RSRP specified in ReportConfigEUTRA IE in TS 36.331 [10].<br>This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0 : 97   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |
| a1ThresholdRsrq | RSRP Threshold to be used in evaluation of EUTRA measurement report triggering condition for event a1. Actual value is (IE value -40)/2 dB. Corresponds to parameter a1-Threshold.Threshold-RSRQ specified in ReportConfigEUTRA IE in TS 36.331 [10].<br>This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0 : 34 | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |
| a2ThresholdRsrp | RSRP Threshold to be used in evaluation of EUTRA measurement report triggering condition for event a2. Actual value is IE value -140 dBm. Corresponds to parameter a2-Threshold.Threshold-RSRP specified in ReportConfigEUTRA IE in TS 36.331 [10].<br>This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0 : 97   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |
| a2ThresholdRsrq | RSRP Threshold to be used in evaluation of EUTRA measurement report triggering condition for event a2. Actual value is (IE value -40)/2 dB. Corresponds to parameter a2-Threshold.Threshold-RSRQ specified in ReportConfigEUTRA IE in TS 36.331 [10].<br>This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0 : 34 | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |
| a3Offset        | Offset to be used in evaluation of EUTRA measurement report triggering condition for event a3. Mapping to values in dB is specified in 36.133 [38]. Corresponds to parameter a3-Offset specified in ReportConfigEUTRA IE in TS 36.331 [10].<br>This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: -30 : 30         | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |
| a4ThresholdRsrp | RSRP Threshold to be used in evaluation of EUTRA measurement report triggering condition for event a4. Actual value is IE value -140 dBm. Corresponds to parameter a4-Threshold.Threshold-RSRP specified in ReportConfigEUTRA IE in TS 36.331 [10].<br>This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0 : 97   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |

|                      |  |   |
|----------------------|--|---|
| a4ThresholdRsrq      | <p>RSRP Threshold to be used in evaluation of EUTRA measurement report triggering condition for event a4. Actual value is (IE value -40)/2 dB. Corresponds to parameter a4-Threshold.Threshold-RSRQ specified in ReportConfigEUTRA IE in TS 36.331 [10].<br/>This attribute may be used for Robustness Optimization.</p> <p>allowedValues: 0 : 34</p>  | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>  |
| a5Threshold1Rsrp     | <p>RSRP Threshold1 to be used in evaluation of EUTRA measurement report triggering condition for event a5. Actual value is IE value -140 dBm. Corresponds to parameter a5-Threshold1.Threshold-RSRP specified in ReportConfigEUTRA IE in TS 36.331 [10].<br/>This attribute may be used for Robustness Optimization.</p> <p>allowedValues: 0 : 97</p>  | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>  |
| a5Threshold1Rsrq     | <p>RSRP Threshold to be used in evaluation of EUTRA measurement report triggering condition for event a5. Actual value is (IE value -40)/2 dB. Corresponds to parameter a5-Threshold1.Threshold-RSRQ specified in ReportConfigEUTRA IE in TS 36.331 [10].<br/>This attribute may be used for Robustness Optimization.</p> <p>allowedValues: 0 : 34.</p>  | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>• isNullable: False</p>  |
| adjacentCell         | <p>This attribute contains the DN of a EUTranGenericCell or ExternalEUTranGenericCell.</p> <p>allowedValues: N/A.</p>  | <p>type: DN<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: True<br/>defaultValue: None<br/>isNullable: False</p>  |
| adjacentSector       | <p>This attribute contains the DN of an ExternalSector.</p> <p>allowedValues: N/A.</p>   | <p>type: DN<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: True<br/>defaultValue: None<br/>isNullable: False</p>  |
| allowedAccessClasses | <p>This holds information for access classes (10-15) – 3GPP TS 22.011 [29] that are allowed for the eUTRANCell .<br/>The access classes are:<br/>Class 10 – emergency call<br/>Class 11 - For PLMN Use.<br/>Class 12 - Security Services;<br/>Class 13 - Public Utilities (e.g. water/gas suppliers);<br/>Class 14 - Emergency Services;<br/>Class 15 - PLMN Staff;</p> <p>allowedValues: See TS 22.011 [29] and 36.331 [10] for more details on the definition and SIB2 broadcast message definition.</p> | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: True<br/>defaultValue: “all access classes are allowed”<br/>isNullable: False</p> |

|                     |  |  |
|---------------------|--|--|
| b1ThresholdCdma2000 | <p>Threshold to be used in CDMA2000 triggering condition for event b1. Mapping to actual dBm values is specified in 3GPP TS 45.008. Corresponds to parameter b1-ThresholdCDMA2000 specified in ReportConfigInterRAT IE in TS 36.331 [10]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0:63.</p>                     | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| b1ThresholdGeran    | <p>Threshold to be used in GERAN triggering condition for event b1. Mapping to actual dBm values is specified in 3GPP TS 45.008. Corresponds to parameter b1-ThresholdGERAN specified in ReportConfigInterRAT IE in TS 36.331 [10]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0:63.</p>                           | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| b1ThresholdUtraEcN0 | <p>EcN0 threshold to be used in UTRA triggering condition for event b1. Mapping to actual dBm values is specified in 3GPP TS 25.133. Corresponds to parameter b1-ThresholdULTA:utra-EcN0 specified in ReportConfigInterRAT IE in TS 36.331 [10]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0:49.</p>              | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| b1ThresholdUtraRscp | <p>RSCP threshold to be used in UTRA triggering condition for event b1. Mapping to actual dBm values is specified in 3GPP TS 25.133. Corresponds to parameter b1-ThresholdULTA:utra-RSCP specified in ReportConfigInterRAT IE in TS 36.331 [10]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: -5:91</p>              | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| b2Threshold1Rsrp    | <p>RSRP Threshold to be used in evaluation of EUTRA measurement report triggering condition for event b2. Actual value is IE value -140 dBm. Corresponds to parameter b2-Threshold1.Threshold-RSRP specified in ReportConfigInterRAT IE in TS 36.331 [10]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0 : 97</p>   | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| b2Threshold1Rsrq    | <p>RSRP Threshold to be used in evaluation of EUTRA measurement report triggering condition for event b2. Actual value is (IE value -40)/2 dB. Corresponds to parameter b2-Threshold1.Threshold-RSRQ specified in ReportConfigInterRAT IE in TS 36.331 [10]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0 : 34</p> | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |



|                      |  |  |
|----------------------|--|--|
| b2Threshold2CDma2000 | <p>Threshold to be used in CDMA2000 measurement report triggering condition for event b2. Mapping to actual dBm values is specified in TS 45.008 [36]. Corresponds to parameter b2-Threshold2CDMA2000 specified in ReportConfigInterRAT IE in TS 36.331 [10]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0 : 63</p>          | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                       |
| b2Threshold2Geran    | <p>Threshold to be used in GERAN measurement report triggering condition for event b2. Mapping to actual dBm values is specified in TS 45.008 [36]. Corresponds to parameter b2-Threshold2GERAN specified in ReportConfigInterRAT IE in TS 36.331 [10]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0 : 63</p>                | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                       |
| b2Threshold2UtraEcN0 | <p>EcN0 threshold to be used in UTRA measurement report triggering condition for event b2. Mapping to actual dBm values is specified in 3GPP TS 25.133. Corresponds to parameter b2-Threshold2ULTRA:utra-EcN0 specified in ReportConfigInterRAT IE in TS 36.331 [10]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0 : 49</p>  | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                       |
| b2Threshold2UtraRscp | <p>RSCP threshold to be used in UTRA measurement report triggering condition for event b2. Mapping to actual dBm values is specified in 3GPP TS 25.133. Corresponds to parameter b2-Threshold2ULTRA:utra-RSCP specified in ReportConfigInterRAT IE in TS 36.331 [10]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: -5 : 91</p> | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                       |
| candidateDeNBcells   | <p>A list of ECGIs of the candidates DeNB cells for the subject Relay Node in Attach for RN operation (phase 2), see 36.300 [14].</p> <p>allowedValues: See 3GPP TS 36.413 [27], 36.300 [14]</p>   | <p>type: &lt;&lt;dataType&gt;&gt;<br/>multiplicity: 1..*<br/>isOrdered: False<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| cellIdList           | <p>This holds a list of DN of EUTRANGenericCell. These cells all belong to one MBSFN Area.</p> <p>allowedValues: N/A</p>   | <p>type: DN<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                            |

|                             |  |   |
|-----------------------------|--|---|
| <p>cellAccessInfoList</p>   | <p>A list of entries where an entry identifies a PLMN sharing the cell resources.</p> <p>The presence of this attribute indicates that the EUTRAN cell is supporting RAN sharing for PLMN(s) using different TAC and Cell-ID for the cell.</p> <p>An entry has four attributes: <code>plmnId</code>, <code>tac</code>, <code>cellId</code>, <code>managementServiceExposed</code>.</p> <p>The <code>plmnId</code> identifies the PLMN sharing the cell resources.</p> <p>The <code>tac</code> and the <code>cellId</code> are used by the PLMN (identified by <code>plmnId</code>) sharing the cell resources.</p> <p>The <code>managementServiceExposed</code> indicates the management services (e.g. FM) exposed to the PLMN (identified by <code>plmnId</code>). The precise semantics of this attribute is not specified.</p> <p>One <code>plmnId</code> (value) can be included at most once in this list. The PLMN identified cannot be the primary PLMN. Its identifier cannot be included in the <code>plmnIdList</code>.</p> | <p>type: &lt;&lt;dataType&gt;&gt;<br/> multiplicity: 1..5<br/> isOrdered: False<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p> |
| <p>cellIndividualOffset</p> | <p>Offset applicable to a neighbouring cell. It is used for evaluating the neighbouring cell for handover in connected mode. This attribute corresponds to parameter <code>cellIndividualOffset</code> in <code>MeasObjectEUTRA</code> IE in TS 36.331 [10]. This attribute is used by the HandOver parameter Optimization (HOO) function or Load Balancing Optimization (LBO) function.</p> <p>allowedValues:<br/> dB-24, dB-22, dB-20, dB-18, dB-16, dB-14, dB-12, dB-10, dB-08, dB-06, dB-05, dB-04, dB-03, dB-02, dB-01, dB+00, dB+01, dB+02, dB+03, dB+04, dB+05, dB+06, dB+08, dB+10, dB+12, dB+14, dB+16, dB+18, dB+20, dB+22, dB+24</p>  | <p>type: &lt;&lt;enumeration&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: True<br/> defaultValue: None<br/> isNullable: False</p>  |
| <p>cellLocalId</p>          | <p>Unambiguously identify a cell within an eNodeB.</p> <p>allowedValues: 0 : 255.</p>  | <p>type: Integer<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: True<br/> defaultValue: None<br/> isNullable: False</p>                      |
| <p>cellLocalIdList</p>      | <p>This holds a list of cell local identities that can be assigned to the <code>cellLocalId</code> attribute of the new split or merged cells by the Active Antenna System operations. The assignment algorithm is not specified.</p> <p>allowedValues of each entry: 0 : 255</p>  | <p>type: Integer<br/> multiplicity: *<br/> isOrdered: False<br/> isUnique: True<br/> defaultValue: None<br/> isNullable: False</p>                    |
| <p>cellResvInfo</p>         | <p>This attribute represents whether the cell is MBSFN Area Reserved Cell or not.<br/> See TS 36.300 [11] for MBSFN Area Reserved Cell.</p> <p>allowedValues: See 3GPP TS 36.443 [28] for Cell Reservation Info.</p>   | <p>type:&lt;&lt;enumeration&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: True<br/> defaultValue: None<br/> isNullable: False</p>   |

|                          |  |  |
|--------------------------|--|--|
| cellSize                 | <p>See cell-Size in TS 36.423 [24].</p> <p>allowedValues: See cell-Size in TS 36.423 [24].</p>   | <p>type: &lt;&lt;enumeration&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: True<br/> defaultValue: None<br/> isNullable: False</p> |
| cOCStatus                | <p>This attribute holds the information about cell outage compensation (COC) activities for the cell which name contains the <code>CellOutageCompensationInformation</code> IOC instance.</p> <p>The initial state is <code>cOCDeactive</code>.</p> <p>When a cell outage is detected and its compensation starts, then the state is <code>cOCActivating</code>.</p> <p>When COC function decides that all activities to activate the compensation are done, the state changes to <code>cOCActive</code>.</p> <p>When outage of cell is ended and activities to remove the compensation are ongoing, the state changes to <code>cOCDeactivating</code>.</p> <p>When outage of cell ends and all activities to remove the compensation are done, the state changes back to <code>cOCDeactive</code>.</p> <p>In case of errors during activation or deactivation, this attribute also contains a list of elements which could not be reconfigured by the COC function.</p> <p>If there are no errors during activation or deactivation, the list of elements shall be empty.</p> <p>For an example how <code>notifyAttributeValueChange</code> notifications related to this attribute are used to inform an <code>IRPManager</code> about COC activities see Annex A.</p> <p>allowedValues: This element contains 2 parts, state and <code>errorList</code><br/> state = enumerated<br/> <pre>{ cOCActivating, cOCActive, cOCDeactivating, cOCDeactive }</pre> <code>errorList</code> = list of DNs</p> | <p>type: &lt;&lt;dataType&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p>     |
| commonChannelPowerOffset | <p>Power offset of the Primary Synchronization Channel, Secondary Synchronization Channel and Physical Broadcast Channel with respect to the <code>referenceSignalPower</code>. Value in dB is the actual value divided by 10. For example, value -30 represents -3dB; value 120 represent 12dB etc. This attribute may be used for Coverage and Capacity Optimization and ICIC.</p> <p>allowedValues: -350:150.</p>   | <p>type: Integer<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p>                      |

|                           |  |  |
|---------------------------|--|--|
| configurationIndex        | Provides index into the table defining PRACH resources within the frame. Corresponds to PRACH-Configuration-Index parameter defined in TS 36.331 [10] and TS 36.211 [12]. This attribute may be used for RACH Optimization.<br><br>allowedValues: 0:63.  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| contentionResolutionTimer | Contention resolution timer. Corresponds to parameter mac-ContentionResolutionTimer specified in TS 36.331 [10] and in TS 36.321 [8]. Value sf <sub>n</sub> corresponds to n subframes. This attribute may be used for RACH Optimization.<br><br>allowedValues: {sf8, sf16, sf24, sf32, sf40, sf48, sf56, sf64}      | type: <<enumeration>><br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |
| earfcn                    | It is the frequency number for the central frequency. See 3GPP TS 36.104[14].<br><br>allowedValues: See 3GPP TS 36.104[14].  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| earfcnDl                  | Specifies the channel number for the central DL frequency. The mapping from channel number to physical frequency is described in 3GPP specification TS 36.101 [13] subclause 5.7.3.<br><br>allowedValues: See EARFCN in TS 36.101 [13] subclause 5.7.3   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| earfcnUl                  | Specifies the channel number for the central UL frequency. The mapping from channel number to physical frequency is described in 3GPP specification TS 36.101 [13] subclause 5.7.3.<br><br>allowedValues: See EARFCN in TS 36.101 [13] subclause 5.7.3   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| eNBId                     | Unambiguously identifies an eNodeB within a PLMN<br><br>allowedValues: See 3GPP TS 36.413 [27], 36.300 [11]  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| hysteresisEutraA1         | Hysteresis applied to entry and leave condition of a report triggering event A1. Maps to the instance of the <i>hysteresis</i> IE specified in <i>ReportConfigEUTRA</i> IE in TS 36.331 [10] corresponding to event A1. This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0:30. | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| hysteresisEutraA2         | Hysteresis applied to entry and leave condition of a report triggering event A2. Maps to the instance of the <i>hysteresis</i> IE specified in <i>ReportConfigEUTRA</i> IE in TS 36.331 [10] corresponding to event A2. This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0:30. | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| hysteresisEutraA3         | Hysteresis applied to entry and leave condition of a report triggering event A3. Maps to the instance of the <i>hysteresis</i> IE specified in <i>ReportConfigEUTRA</i> IE in TS 36.331 [10] corresponding to event A3. This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0:30. | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |

|                   |   |   |
|-------------------|---|---|
| hysteresisEutraA4 | Hysteresis applied to entry and leave condition of a report triggering event A4. Maps to the instance of the <i>hysteresis</i> IE specified in <i>ReportConfigEUTRA</i> IE in TS 36.331 [10] corresponding to event A4. This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0:30.  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False                  |
| hysteresisEutraA5 | Hysteresis applied to entry and leave condition of a report triggering event A5. Maps to the instance of the <i>hysteresis</i> IE specified in <i>ReportConfigEUTRA</i> IE in TS 36.331 [10] corresponding to event A5. This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0:30.  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False                  |
| hysteresisIratB1  | Hysteresis applied to entry and leave condition of the IRAT report triggering event B1. Maps to <i>hysteresis</i> IE specified in <i>ReportConfigInterRAT</i> IE in TS 36.331 [10] corresponding to event B1. This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0:30.  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False                  |
| hysteresisIratB2  | Hysteresis applied to entry and leave condition of the IRAT report triggering event B2. Maps to <i>hysteresis</i> IE specified in <i>ReportConfigInterRAT</i> IE in TS 36.331 [10] corresponding to event B2. This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0:30.  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False                  |
| id                | An attribute whose "name+value" can be used as an RDN when naming an instance of the object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.  | type: DN<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>allowedValues: N/A<br>isNullable: False |
| intraANRSwitch    | This attribute determines whether the intra E-UTRAN ANR function is activated or deactivated.<br><br>If "on", the intra E-UTRAN ANR function may add or remove intra E-UTRAN Neighbour Relations, i.e. add or remove <i>EUtranRelation</i> instances from <i>EUtranGenericCells</i> of this <i>ENBFunction</i> .<br>If "off", the intra E-UTRAN ANR Function must not add or remove Neighbour Relations, i.e. add or remove <i>EUtranRelation</i> instances from <i>EUtranGenericCells</i> of this <i>ENBFunction</i> .<br><br>allowedValues: on, off | type: <<enumeration>><br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: True<br>defaultValue: on<br>isNullable: False           |

|                                |   |   |
|--------------------------------|---|---|
| iRATANRSwitch                  | <p>This attribute determines whether the IRAT ANR function is activated or deactivated.</p> <p>If "on", the IRAT ANR function may add or remove IRAT Neighbour Relations, i.e. add or remove UtranRelation or GsmRelation instances from EUTranGenericCells of this ENBFunction. If "off", the IRAT ANR Function must not add or remove IRAT Neighbour Relations, i.e. add or remove UtranRelation or GsmRelation instances from EUTranGenericCells of this ENBFunction.</p> <p>allowedValues: on, off</p>  | <p>type: &lt;&lt;enumeration&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: True<br/> defaultValue: on<br/> isNullable: False</p>  |
| isChangeForEnergySavingAllowed | <p>This attribute allows to IRPManager to prohibit or allow configuration changes of the cell for ESM purposes by the IRPAgent. This restriction also applies to instances name contained in such cells. Their attribute values can not be changed by the IRPAgent.</p> <p>allowedValues: yes,no</p>  | <p>type: &lt;&lt;enumeration&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p> |
| isCOCAAllowed                  | <p>This attribute allows to IRPManager to prohibit or allow configuration changes of the cell for cell outage compensation purposes by the IRPAgent. This restriction also applies to instances name contained in such cells. Their attribute values can not be changed by the IRPAgent.</p> <p>allowedValues: yes,no</p>   | <p>type: &lt;&lt;enumeration&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p> |
| isESCoveredBy                  | <p>The value of the attribute is configured by the IRPmanager and is not changed by the IRPAgent. It indicates whether the adjacentCell according to this planning provides no, partial or full coverage for the cell which name-contains the EUTranRelation instance.</p> <p>Adjacent cells with this attribute equal to "yes" are recommended to be considered as candidate cells to take over the coverage when the original cell is about to be transferred to energySaving state. The entirety of adjacent cells with this property equal to "partial" are recommended to be considered as entirety of candidate cells to take over the coverage when the original cell is about to be transferred to energySaving state.</p> <p>allowedValues: no, partial, yes</p> | <p>type: &lt;&lt;enumeration&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p> |
| isHOAllowed                    | <p>This indicates if HO is allowed or prohibited.</p> <p>If TRUE, handover is allowed from source cell to target cell. The source cell is identified by the name-containing EUTranGenericCell or UtranGenericCell of the EUTranRelation that has the isHOAllowed. The target cell is referenced by the EUTranRelation that has this isHOAllowed.</p> <p>If FALSE, handover shall not be allowed.</p> <p>allowedValues: TRUE, FALSE</p>  | <p>type: Boolean<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p>                     |

|                              |  |   |
|------------------------------|--|---|
| isICICInformationSendAllowed | <p>This indicates if ICIC (Inter Cell Interference Coordination) load information message (see TS 36.423 [24] Section 9.1.2.1 LOAD INFORMATION) sending is allowed or prohibited.</p> <p>If 'yes', ICIC load information message sending is allowed from source cell to target cell. The source cell is identified by the name-containing <code>EUTranGenericCell</code> of the <code>EUTranRelation</code> that has the <code>isICICInformationSendAllowed</code>. The target cell is referenced by the <code>EUTranRelation</code> that has this <code>isICICInformationSendAllowed</code>.</p> <p>If 'no', ICIC load information message sending shall not be allowed.</p> <p>allowedValues: yes,no</p> | <p>type: &lt;&lt;enumeration&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p>     |
| isLBAllowed                  | <p>This indicates if load balancing is allowed or prohibited from source cell to target cell.</p> <p>If 'yes', load balancing is allowed from source cell to target cell. The source cell is identified by the name-containing <code>EUTranGenericCell</code> of the <code>EUTranRelation</code> that has the <code>isLBAllowed</code>. The target cell is referenced by the <code>EUTranRelation</code> that has this <code>isLBAllowed</code>.</p> <p>If 'no', load balancing shall be prohibited from source cell to target cell.</p> <p>allowedValues: yes,no</p>  | <p>type: &lt;&lt;enumeration&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p>     |
| isLWASupported               | <p>This element indicates whether LWA is supported between the eNB and this WLAN.</p> <p>allowed values: yes, no</p>   | <p>type: Boolean<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: yes<br/> isNullable: False</p>                          |
| isLWIPSupported              | <p>This attribute indicates whether LWIP is supported between the eNB and this WLAN.</p> <p>allowed values: yes, no</p>  | <p>type: Boolean<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: yes<br/> isNullable: False</p>                          |
| isRemoveAllowed              | <p>This indicates if the subject <code>EUTranRelation</code> can be removed (deleted) or not.</p> <p>If TRUE, the subject <code>EUTranRelation</code> instance can be removed (deleted).</p> <p>If FALSE, the subject <code>EUTranRelation</code> instance shall not be removed (deleted) by any entity but an <code>IRPManager</code>.</p> <p>allowedValues: TRUE, FALSE</p>  | <p>type: Boolean<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p>                         |
| LWIPSeGWList                 | <p>This attribute contains a list of <code>IWIPSeGWInfo</code>, and each <code>IWIPSeGWInfo</code> includes the following elements:</p> <ul style="list-style-type: none"> <li>- <code>LWIPSeGWId</code><br/>This element identifies the LWIP SeGW.</li> <li>- <code>LWIPSeGWIpAddressList</code><br/>This element provides the IP addresses of the LWIP SeGW.</li> </ul>  | <p>type: &lt;&lt;dataType&gt;&gt;<br/> multiplicity: 1..*<br/> isOrdered: : False<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p> |

|                          |   |   |
|--------------------------|---|---|
| maximumTransmissionPower | This is the maximum possible for all downlink channels, used simultaneously in a cell, added together.  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False        |
| maxNbrRNAllowed          | This is an integer indicating the maximum number of RNs allowed to be connected. It is a number which can be configured by the operator to control the node/network load.                       | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False        |
| mbsfnAreaId              | This is the identifier of MBSFN Area.<br>See TS 36.300 [11] for MBSFN Area.<br><br>allowedValues: See 3GPP TS 36.443 [28] for mbsfnAreaId   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False        |
| mCC                      | This is the Mobile Country Code (MCC) of the PLMN identifier. See TS 23.003 [3] subclause 2.2 and 12.1.<br><br>allowedValues: a bounded string of 3 characters representing 3 digits.           | type: String<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| mNC                      | This is the Mobile Network Code (MNC) of the PLMN identifier. See TS 23.003 [3] subclause 2.2 and 12.1.<br><br>allowedValues: A bounded string of 2 or 3 characters representing 2 or 3 digits. | type: String<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| nbIoTcellFlag            | This attribute represents whether the cell is supporting NB-IoT or not.<br>See TS 36.300 [11] for NB-IoT cell.<br><br>allowedValues: yes, no.   | type:<<enumeration>><br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |
| ngranCellFlag            | This attribute represents whether the cell is provided by ng-eNB or not.<br>See TS 38.300 [y] for ng-eNB cell.<br><br>allowedValues: yes, no.   | type:<<enumeration>><br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |



|                              |   |  |
|------------------------------|---|--|
| <p>netListeningRSForRIBS</p> | <p>This specifies the configuration of RS (reference signals) for RIBS (radio interface based synchronization) by means of network listening, see Radio Interface based Synchronization in TS 36.300 [11].</p> <p>It is a list of structures where each structure contains the following elements:</p> <ul style="list-style-type: none"> <li>- RS_pattern</li> <li>- Number of CRS ports</li> <li>- Periodicity</li> <li>- Offset</li> </ul> <p>allowedValues:<br/> RS_pattern: CRS only; or CRS and PRS;<br/> CRS (Cell-specific Reference Signal) see clause 6.10.1.1 and 6.10.1.2 in TS 36.211 [12].<br/> PRS (Positioning Reference Signal) see clause 6.10.4.1 and 6.10.4.2 in TS 36.211 [12].<br/> Number of CRS ports: 1 or 2;<br/> Periodicity: 1280ms, 2560ms, 5120ms, or 10240ms;<br/> Offset: range from "0" to (Periodicity-1) wherein the reference signal offset is in number of subframes starting from SFN 0 and subframe 0.</p> <p>More than one network listening reference signal configuration may be configured with a maximum of 4 configurations per eNB.</p> | <p>type: &lt;&lt;dataType&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p>   |
| <p>numberOfRaPreambles</p>   | <p>Number of non-dedicated random access preambles. Corresponds to parameter numberOfRA-Preambles specified in TS 36.331 [10] and in TS 36.321 [8]. Value n4 corresponds to 4, n8 corresponds to 8 and so on.</p> <p>This attribute may be used for RACH Optimization.</p> <p>allowedValues:<br/> n4,n8,n12,n16,n20,n24,n28,n32,n36,n40,n44,n48,n52,n56,n60,n64</p>   | <p>type: &lt;&lt;enumeration&gt;&gt;<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> <ul style="list-style-type: none"> <li>• isNullable: False</li> </ul> </p> |
| <p>partOfSectorPower</p>     | <p>This is the requested part (i.e. %) of the total radio power available to the SectorEquipmentFunction. The requested % power should be allocated to the cell.</p> <p>allowedValues: 1 : 100</p>  | <p>type: Integer<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p>  |
| <p>pb</p>                    | <p><math>P_B</math>, which is described in Section 5.2 of TS 36.213 [25]</p> <p>allowedValues: See 3GPP TS 36.213 [25]</p>  | <p>type: Integer<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p>  |
| <p>pci</p>                   | <p>This holds the Physical Cell Identity (PCI) of the cell (for NM-Centralized, EM-Centralized and Distributed PCI assignment cases).</p> <p>In the case of NM-Centralized PCI assignment, see TS 36.300 [11] subclause 22.3.5, IRPManager signals a specific value by writing this attribute.</p> <p>allowedValues: See TS 36.211 [12] subclause 6.11 for legal values of pci.</p>   | <p>type: Integer<br/> multiplicity: 1<br/> isOrdered: N/A<br/> isUnique: N/A<br/> defaultValue: None<br/> isNullable: False</p>  |

|                                    |  |  |
|------------------------------------|--|--|
| pciList                            | <p>This holds a list of physical cell identities that can be assigned to the pci attribute by eNB. The assignment algorithm is not specified.</p> <p>This attribute shall be supported if and only if the EM-Centralized or Distributed PCI Assignment is supported. See TS 32.500, ref [15] subclause 6.1.6.</p> <p>allowedValues: See TS 36.211 [12] subclause 6.11 for legal values of pci. The number of pci in the list is 1 to 504.</p>  | <p>type: Integer<br/>multiplicity: 1..*<br/>isOrdered: False<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                |
| plmnIdList                         | <p>List of unique identities for PLMN.<br/>Note: A cell can broadcast up to 6 PLMN-id's. This is to support the case that one cell can be used by up to 6 operators' core networks. The PLMN(s) included in this list will use the same single tracking area code (tac) and the same Cell Identity (cellLocalId) for sharing the radio access network resources. See TS 36.300 [11] subclause 10.1.7.<br/>One member of plmnIdList is the primary PLMN Id. See TS 36.331 [10] subclause 6.2.2:<br/>SystemInformationBlockType1/cellAccessRelatedInformation/plmn-IdentityList is a SEQUENCE (SIZE (1..6)).<br/>A PLMN Id included in this list cannot be included in the cellAccessInfoList.<br/>allowedValues: A list of at most six entries of PLMN Identifiers, but at least one (the primary PLMN Id). The PLMN Identifier is composed of a Mobile Country Code (MCC) and a Mobile Network Code (MNC). MCC and MNC are of type string. See TS 23.003 [3] subclause 2.2 and 12.1.</p> | <p>type: PLMNID<br/>multiplicity: 1..6<br/>isOrdered: False<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                 |
| pMax                               | <p>This parameter is used to limit the allowed UE uplink transmission power on the serving EUTRA frequency. Value in dBm. Corresponds to parameter p-Max specified in SIB1 and SIB3 in [10]. This attribute may be used for RACH Optimization.</p> <p>allowedValues: -30 : 33</p>  | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                     |
| powerRampingStep                   | <p>Power increase factor between subsequent random access preamble transmissions. Value in dB. Value dB2 corresponds to 2 dB and so on. Corresponds to parameter powerRampingStep specified in TS 36.331 [10] and in TS 36.321 [8]. This attribute may be used for RACH Optimization.<br/>allowedValues: dB0, dB2, dB4, dB6</p>  | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| preambleInitialReceivedTargetPower | <p>This parameter denotes the baseline for computation of the transmit power for random access power transmission. Corresponds to parameter preambleInitialReceivedTargetPower specified in TS 36.331 [10] and in TS 36.321 [8]. Value dBm-120 corresponds to -120 dBm and so on. This attribute may be used for RACH Optimization.</p> <p>allowedValues: dBm-120, dBm-118, dBm-116, dBm-114, dBm-112, dBm-110, dBm-108, dBm-106, dBm-104, dBm-102, dBm-100, dBm-98, dBm-96, dBm-94, dBm-92, dBm-90</p>  | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |

|                    |   |  |
|--------------------|---|--|
| preambleTransMax   | <p>Maximum number of random access preamble transmissions. Corresponds to parameter preambleTransMax specified in TS 36.331 [10] and in TS 36.321 [8].<br/>This attribute may be used for RACH Optimization.</p> <p>allowedValues: n3, n4, n5, n6, n7, n8, n10, n20, n50, n100, n200</p>  | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| qciDscpMappingList | <p>It is a list of mapping between QCI and DSCP, each mapping is a structure including the element QCI and DSCP;<br/>Wherein<br/>- QCI represents the number of the QCI (Ref. 3GPP TS 23.203 [33]);<br/>- DSCP represents the DiffServ codepoint (Ref. 3GPP TS 23.207[34] and RFC 2474[35]).</p> <p>allowedValues: For QCI, Ref. 3GPP TS 23.203[33];<br/>For DSCP, Ref. RFC 2474[35]</p>  | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| qHyst              | <p>Hysteresis value applied to serving cell for evaluating cell ranking criteria. Value in dB.<br/>Corresponds to parameter q-Hyst specified in SIB3 in TS 36.331 [10] and in TS 23.207 [34].<br/>This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: dB0, dB1, dB2, dB3, dB4, dB5, dB6, dB8, dB10, dB12, dB14, dB16, dB18, dB20, dB22, dB24</p>   | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| qOffset            | <p>Offset applicable to a specific neighbouring cell used for evaluating the cell as a candidate for cell re-selection. Corresponds to parameter q-OffsetCell broadcast in SIB4 for intra-frequency cells and in SIB5 for inter-frequency cells, specified in TS 36.331 [10].<br/>This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: dB-24, dB-22, dB-20, dB-18, dB-16, dB-14, dB-12, dB-10, dB-8, dB-6, dB-5, dB-4, dB-3, dB-2, dB-1, dB0, dB1, dB2, dB3, dB4, dB5, dB6, dB8, dB10, dB12, dB14, dB16, dB18, dB20, dB22, dB24</p> | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| qOffsetCdma2000    | <p>Indicates a CDMA2000-specific offset to be applied when evaluating triggering conditions for measurement reporting in connected mode.<br/>Corresponds to parameter offsetFreq included in the IE MeasObjectCDMA2000 specified in 3GPP TS 36.331. This value will apply to all CDMA2000 frequencies.<br/>This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: -15..15</p>   | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                     |

|                    |  |  |
|--------------------|--|--|
| qOffsetGeran       | <p>Indicates a GERAN-specific offset to be applied when evaluating triggering conditions for measurement reporting in connected mode. Corresponds to parameter offsetFreq included in the IE MeasObjectGERAN specified in 3GPP TS 36.331[10]. This value will apply to all GERAN frequencies. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: -15..15</p>               | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| qOffsetUtra        | <p>Indicates a UTRA-specific offset to be applied when evaluating triggering conditions for measurement reporting in connected mode. Corresponds to parameter offsetFreq included in the IE MeasObjectUTRA specified in 3GPP TS 36.331 [10]. This value will apply to all UTRA frequencies. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: -15..15</p>                 | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| qQualMinUtra       | <p>Minimum required received Eclo level on this UTRA FDD carrier. Value in dB. Corresponds to parameter q-QualMin in SIB6 in TS 36.331 [10] and in 32.422 [30]. This attribute applies to all UTRA frequencies. This attribute may be used for Coverage and Capacity Optimization and ICIC.</p> <p>allowedValues: -24 :0</p>   | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| qRxLevMinEUtraSib1 | <p>Minimum required received RSRP level of a E-UTRA cell for cell selection. Actual value in dBm is obtained by multiplying by 2. Corresponds to parameter q-rxLevMin in SIB1 in TS 36.331 [10] and in TS 23.207 [34]. This attribute may be used for Coverage and Capacity Optimization and ICIC.</p> <p>allowedValues: -70 :-22</p>  | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| qRxLevMinEUtraSib3 | <p>Minimum required received RSRP level for intra-frequency E-UTRA cell re-selection. Actual value in dBm is obtained by multiplying by 2. Corresponds to parameter q-rxLevMin in SIB3 in TS 36.331 [10] and in TS 23.207 [34]. This attribute may be used for Coverage and Capacity Optimization and ICIC.</p> <p>allowedValues: -70 :-22</p>   | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: True</p>  |
| qRxLevMinGeran     | <p>Minimum required received RSSI level on a GERAN frequency carrier for re-selection to a GERAN carrier. Actual value in dBm is value * 2 - 115. Corresponds to parameter q-rxLevMin in SIB7 in TS 36.331 [10] and to RXLEV_ACCESS_MIN in [31]. This attribute applies to all GERAN frequencies. This attribute may be used for Coverage and Capacity Optimization and ICIC.</p> <p>allowedValues: 0 : 63</p> | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |

|                      |  |  |
|----------------------|--|--|
| qRxLevMinUtra        | <p>Minimum required received RSCP level on a UTRA frequency carrier. Actual value in dBm is obtained by multiplying by 2 plus 1. Corresponds to parameter q-rxLevMin in SIB6 in TS 36.331 [10] and in 32.422 [30]. This attribute applies to all UTRA frequencies.</p> <p>This attribute may be used for Coverage and Capacity Optimization and ICIC.</p> <p>allowedValues: -60 :-13</p> | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>   |
| referenceSignalPower | <p>This defines the cell specific downlink reference signal transmit power, which is described in 3GPP TS 36.213[25]</p> <p>allowedValues: See 3GPP TS 36.331 [10]</p>   | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>   |
| relatedAntennaList   | <p>This is an attribute to list the DNs of AntennaFunction(s) (see TS 28.662 [31]) that support the EUTranGenericCell.</p> <p>allowedValues: See 'relatedAntennaList' in Ref. 3GPP TS 28.662 [31]</p>  | <p>type: DN<br/>multiplicity: 1..*<br/>isOrdered: False<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>   |
| relatedSector        | <p>This is an attribute to the DN of SectorEquipmentFunction (see TS 28.662[31]) that support the EUTranGenericCell.</p> <p>allowedValues: See 'SectorEquipmentFunction' in Ref. 3GPP TS 28.662 [31].</p>  | <p>type: DN<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>  |
| relatedTmaList       | <p>This is an attribute to list the DNs of TmaFunction(s) (see TS 28.662[31]) that support the EUTranGenericCell.</p> <p>allowedValues: See 'relatedTmaList' in Ref. 3GPP TS 28.662 [31].</p>  | <p>type: DN<br/>multiplicity: 1..*<br/>isOrdered: False<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>   |
| responseWindowSize   | <p>Denotes the duration of the random access response window.</p> <p>Corresponds to parameter ra-ResponseWindowSize specified in 3GPP TS 36.331 section 6.3.2 and in 3GPP TS 36.321 section 5.1.4. Value sfn corresponds to n subframes.</p> <p>This attribute may be used for RACH Optimization.</p> <p>allowedValues: sf2, sf3, sf4, sf5, sf6, sf7, sf8,sf10</p>                       | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                           |
| rootSequenceIndex    | <p>Logical root sequence index used to determine 64 physical RACH preamble sequences available in the cell. Corresponds to RACH_ROOT_SEQUENCE parameter defined in TS 36.331 [10] and 36.211 [12].</p> <p>This attribute may be used for RACH Optimization.</p> <p>allowedValues: 0 : 837</p>  | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None</p> <ul style="list-style-type: none"> <li>isNullable: False</li> </ul> |
| servedRN             | <p>This attribute contains the DNs of one or more associated instances of RNFunction and ExternalRNFunction.</p>   | <p>type: DN<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>  |

|                           |  |  |
|---------------------------|--|--|
| servingCell               | This attribute contains the DN of one associated instance of EutranGenericCell or ExternalEutranGenericCell.   | type: DN<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False              |
| sfAssignment              | This is the uplink-downlink subframe configuration number of a TDD E-UTRAN cell.<br><br>allowedValues: See 3GPP TS 36.211 [12].  | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| sharNetTceMappingInfoList | This attribute includes a list of elements. Each element is a tuple of shared PLMN Id (called "PLMN Target"), TCE ID and the corresponding TCE IP address.<br><br>In case when several PLMNs and Logged MDT are supported, this attribute is used to translate from the TCE IP Address to TCE ID when a Logged MDT is ordered to the UE and to translate the TCE ID to TCE IP address when the UE has sent the log to the network.<br><br>allowedValues: See "Trace Collection Entity Address" and "Trace Collection Entity Id" in 3GPP TS 32.422 [30].<br>The "PLMN Target" shall be one of the PLMNs listed in plmnIdList. | type: <<dataType>><br>multiplicity: 1..*<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |
| sIntraSearch              | Threshold for intra-frequency measurements. Actual value in dB is obtained by multiplying by 2. Corresponds to parameter s-IntraSearch specified in SIB3 in TS 36.331 [10] and in TS 23.207 [34]. This attribute may be used for Mobility Robustness Optimization.<br><br>allowedValues: 0: 31   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>• isNullable: False       |
| sizeOfRAPreambleGroupA    | Size of the random access preamble group A. Corresponds to parameter sizeOfRAPreambleGroup specified in TS 36.331 [10] and TS 36.321 [8]. This attribute may be used for RACH Optimization.<br><br>allowedValues: n4, n8, n12, n16, n20, n24, n28, n32, n36, n40, n44, n48, n52, n56, n60  | type: <<enumeration>><br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False |
| specialSfPatterns         | This is the special subframe configuration number of a TDD E-UTRAN cell.<br><br>allowedValues: See 3GPP TS 36.211[12].   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |
| tac                       | Common Tracking Area Code for the PLMNs. The identity used to identify tracking areas.<br><br>allowedValues:<br>a) It is the Tracking Area Code (TAC).<br>b) A cell can only broadcast one TAC. See TS 36.300 [11], section 10.1.7 (PLMNID and TAC relation).<br>c) TAC is defined in TS 23.003 [3], section 19.4.2.3.   | type: Integer<br>multiplicity: 1<br>isOrdered: N/A<br>isUnique: N/A<br>defaultValue: None<br>isNullable: False         |

|                      |   |  |
|----------------------|---|--|
| tceIDMappingInfoList | <p>This attribute includes a list of TCE ID and the corresponding TCE IP address. It is used in Logged MDT case to provide the information to the eNodeB to get the corresponding TCE IP address when there is an MDT log received from the UE. This attribute is used if only one PLMN is supported.</p> <p>allowedValues: See "Trace Collection Entity Address" and "Trace Collection Entity Id" in 3GPP TS 32.422 [30].</p>  | <p>type: &lt;&lt;dataType&gt;&gt;<br/>multiplicity: 1..*<br/>isOrdered: False<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| tCI                  | <p>This is the Target Cell Identifier. It consists of E-UTRAN Cell Global Identifier (ECGI) and Physical Cell Identifier (PCI) of the target cell.</p> <p>The EUTranRelation.tCI identifies the target cell from the perspective of the EUTranGenericCell, the name-containing instance of the subject EUTranRelation instance.</p> <p>allowedValues: The Target Cell Identifier is defined in TS 36.300 [11]. See TS 36.211 [12] subclause 6.11 for legal values of the PCI.</p>                                   | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                       |
| timeToTriggerEutraA1 | <p>Time during which measurement report triggering condition needs to be met in order to trigger a measurement report for event A1. Maps to the <i>timeToTrigger</i> IE specified in <i>ReportConfigEUTRA</i> IE in TS 36.331 [10] corresponding to event A1. Value ms0 corresponds to 0 milliseconds etc. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: ms0, ms40, ms64, ms80, ms100, ms128, ms160, ms256, ms320, ms480, ms512, ms640, ms1024, ms1280, ms2560, ms5120</p> | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>   |
| timeToTriggerEutraA2 | <p>Time during which measurement report triggering condition needs to be met in order to trigger a measurement report for event A2. Maps to the <i>timeToTrigger</i> IE specified in <i>ReportConfigEUTRA</i> IE in TS 36.331 [10] corresponding to event A2. Value ms0 corresponds to 0 milliseconds etc. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: ms0, ms40, ms64, ms80, ms100, ms128, ms160, ms256, ms320, ms480, ms512, ms640, ms1024, ms1280, ms2560, ms5120</p> | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>   |
| timeToTriggerEutraA3 | <p>Time during which measurement report triggering condition needs to be met in order to trigger a measurement report for event A3. Maps to the <i>timeToTrigger</i> IE specified in <i>ReportConfigEUTRA</i> IE in TS 36.331 [10] corresponding to event A3. Value ms0 corresponds to 0 milliseconds etc. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: ms0, ms40, ms64, ms80, ms100, ms128, ms160, ms256, ms320, ms480, ms512, ms640, ms1024, ms1280, ms2560, ms5120</p> | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>   |

|                      |  |  |
|----------------------|--|--|
| timeToTriggerEutraA4 | <p>Time during which measurement report triggering condition needs to be met in order to trigger a measurement report for event A4. Maps to the <i>timeToTrigger</i> IE specified in <i>ReportConfigEUTRA</i> IE in TS 36.331 [10] corresponding to event A4. Value ms0 corresponds to 0 milliseconds etc. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: ms0, ms40, ms64, ms80, ms100, ms128, ms160, ms256, ms320, ms480, ms512, ms640, ms1024, ms1280, ms2560, ms5120</p>        | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| timeToTriggerEutraA5 | <p>Time during which measurement report triggering condition needs to be met in order to trigger a measurement report for event A5. Maps to the <i>timeToTrigger</i> IE specified in <i>ReportConfigEUTRA</i> IE in TS 36.331 [10] corresponding to event A5. Value ms0 corresponds to 0 milliseconds etc. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: ms0, ms40, ms64, ms80, ms100, ms128, ms160, ms256, ms320, ms480, ms512, ms640, ms1024, ms1280, ms2560, ms5120</p>        | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| timeToTriggerIratB1  | <p>Time during which IRAT measurement report triggering condition needs to be met in order to trigger IRAT measurement report for event B1. Maps to <i>timeToTrigger</i> IE specified in <i>ReportConfigInterRAT</i> IE in TS 36.331 [10] corresponding to event B1. Value ms0 corresponds to 0 milliseconds etc. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: ms0, ms40, ms64, ms80, ms100, ms128, ms160, ms256, ms320, ms480, ms512, ms640, ms1024, ms1280, ms2560, ms5120</p> | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| timeToTriggerIratB2  | <p>Time during which IRAT measurement report triggering condition needs to be met in order to trigger IRAT measurement report for event B2. Maps to <i>timeToTrigger</i> IE specified in <i>ReportConfigInterRAT</i> IE in TS 36.331 [10] corresponding to event B2. Value ms0 corresponds to 0 milliseconds etc. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: ms0, ms40, ms64, ms80, ms100, ms128, ms160, ms256, ms320, ms480, ms512, ms640, ms1024, ms1280, ms2560, ms5120</p> | <p>type: &lt;&lt;enumeration&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| tReselectionCDMA2000 | <p>Cell reselection timer for reselection to a CDMA2000 band. Value in seconds. Corresponds to parameter t-ReselectionCDMA2000 specified in SIB8 in TS 36.331 [10] and to TReselectionCDMA_HRPD or TReselectionCDMA_1xRTT in TS 23.207 [34]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0 :7</p>   | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                     |
| tReselectionEutra    | <p>Cell reselection timer for intra frequency E-UTRA cell reselection. Value in seconds. Corresponds to parameter t-ReselectionEUTRA specified in SIB3 in TS 36.331 [10] and in TS 23.207 [34]. This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0 :7</p>  | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                     |



|                   |   |   |
|-------------------|---|---|
| tReselectionGeran | <p>Cell reselection timer for reselection to a GERAN frequency carrier. Value in seconds. Corresponds to parameter t-ReselectionGERAN specified in SIB7 in TS 36.331 [10] and to TReselectionGERA in TS 23.207 [34].</p> <p>This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0 :7</p>   | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                  |
| tReselectionUtra  | <p>Cell reselection timer for reselection to a UTRA frequency carrier. Value in seconds. Corresponds to parameter t-ReselectionUTRA specified in SIB6 in TS 36.331 [10] and in TS 23.207 [34].</p> <p>This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0 :7</p>   | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                  |
| tStoreUeContext   | <p>The timer used for detection of too early HO. Corresponds to Tstore_UE_cntxt timer described in TS 36.300 [11]. Value in 100 milliseconds.</p> <p>This attribute may be used for Mobility Robustness Optimization.</p> <p>allowedValues: 0 :1023</p>   | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>                  |
| wLANGeoLocation   | <p>This attribute provides the latitude and longitude of the location of the WLAN.</p> <p>allowed values:<br/>for latitude: - 90 to 90<br/>for longitude: - 180 to 180</p>  | <p>type: &lt;&lt;dataType&gt;&gt;<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| wLANId            | <p>This attribute identifies the WLAN by the BSSID, the SSID, and/or the HESSID (see clause 9.2.7 of TS 36.463 [43]).</p> <p>allowedValues: see the BSSID, SSID, and/or the HESSID in clause 9.2.7 of TS 36.463 [43].</p>   | <p>type: String<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: Yes<br/>defaultValue: None<br/>isNullable: False</p>                   |
| wLANInfoList      | <p>This attribute contains a list of WLANInfo, and each WLANInfo includes the following elements:</p> <ul style="list-style-type: none"> <li>- WLANId<br/>This element identifies the WLAN by the BSSID, the SSID, and/or the HESSID (see TS 36.463 [43]).</li> <li>- WLANOperationalState<br/>This element indicates whether the WLAN is in operation normally or abnormally.</li> <li>- EnbWithLWARelation<br/>This element identifies the eNB, by the DN, with which the subject WLAN has LWA relation.</li> </ul> <p>allowedValues: N/A</p> | <p>type: String<br/>multiplicity: 0..*<br/>isOrdered: False<br/>isUnique: N/A<br/>defaultValue: No default value<br/>isNullable: True</p>   |

|                        |   |  |
|------------------------|---|--|
| x2BlockList            | <p>This is a list of DNs of ENBFunction and ExternalENBFunction. If the target node DN is a member of the source node's ENBFunction.x2BlockList, the source node is:</p> <ol style="list-style-type: none"> <li>1) Prohibited from sending X2 connection request to target node;</li> <li>2) Forced to tear down established X2 connection to target node</li> <li>3) Not allowed to accept incoming X2 connection request from target node.</li> </ol> <p>The same DN may appear here and in ENBFunction.x2AllowList. In such case, the DN in x2AllowList shall be treated as if it is absent.</p> | <p>type: DN<br/>multiplicity: 1..*<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>     |
| x2HOBLOCKList          | <p>This is a list of DNs of ENBFunction and ExternalENBFunction. The ENBFunction.x2HOBLOCKList identifies a list of neighbour ENBFunction and ExternalENBFunction with whom the subject ENBFunction is prohibited to use X2 interface for HO's even if the X2 interface exists between them.</p>  | <p>type: DN<br/>multiplicity: 1..*<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>     |
| x2IpAddressList        | <p>Represents one or more IP addresses used by ENBFunction for this ENBFunction's X2 Interface</p> <p>allowedValues: One or more IPv4 or IPv6 addresses</p>   | <p>type: String<br/>multiplicity: 1..*<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| x2AllowList            | <p>This is a list of DNs of ENBFunction and ExternalENBFunction. If the target node DN is a member of the source node's ENBFunction.x2AllowList, the source node :</p> <ul style="list-style-type: none"> <li>- Is allowed to request the establishment of X2 connection with the target node;</li> <li>- Is not allowed to initiate the tear down of established X2 connection to target node</li> </ul> <p>The same DN may appear here and in ENBFunction.x2BlockList. In such case, the DN here shall be treated as if it is absent.</p>   | <p>type: String<br/>multiplicity: 1..*<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p> |
| eutranFrequency        | <p>This attribute contains the DN of the referenced EUltraFrequency.</p> <p>allowedValues: N/A</p>  | <p>type: DN<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: True<br/>defaultValue: None<br/>isNullable: False</p>       |
| multiBandInfoListEutra | <p>It is a list of additional frequency bands the frequency belongs to.</p> <p>allowedValues: { 1..256 }</p>  | <p>type: Integer<br/>multiplicity: 1<br/>isOrdered: N/A<br/>isUnique: N/A<br/>defaultValue: None<br/>isNullable: False</p>   |

|              |   |   |
|--------------|---|---|
| plMNInfoList | <p>It defines which PLMNs that can be served by the NG-RAN generic cell provided by ng-eNB function, and which S-NSSAIs can be supported by the NG-RAN generic cell for corresponding PLMN in case of network slicing feature is supported</p> <p>The detailed information of PLMNInfo&lt;&lt;dataType&gt;&gt; see clause 4.3.41 in TS 28.541[40]</p> <p>allowedValues: Not applicable.</p> | <p>type: PLMNInfo<br/>multiplicity: 1..*<br/>isOrdered: False<br/>isUnique: True<br/>defaultValue: None<br/>isNullable: False</p> |
|--------------|---|---|

## 4.4.2 Constraints

None.

## 4.5 Common notifications

### 4.5.1 Alarm notifications

This subclause presents a list of notifications, defined in TS 32.111-2 [18], that IRPManager can receive. The notification header attribute `objectClass/objectInstance`, defined in TS 32.302 [37], would capture the DN of an instance of an IOC defined in this IRP specification.

| Name  | Qualifier                             | Notes |
|---|---------------------------------------|-------|
| <code>notifyAckStateChanged</code>          | See Alarm IRP (3GPP TS 32.111-2 [18]) |       |
| <code>notifyChangedAlarm</code>             | See Alarm IRP (3GPP TS 32.111-2 [18]) |       |
| <code>notifyClearedAlarm</code>             | See Alarm IRP (3GPP TS 32.111-2 [18]) |       |
| <code>notifyNewAlarm</code>                 | See Alarm IRP (3GPP TS 32.111-2 [18]) |       |
| <code>notifyComments</code>                 | See Alarm IRP (3GPP TS 32.111-2 [18]) |       |
| <code>notifyAlarmListRebuilt</code>         | See Alarm IRP (3GPP TS 32.111-2 [18]) |       |
| <code>notifyPotentialFaultyAlarmList</code> | See Alarm IRP (3GPP TS 32.111-2 [18]) |       |

### 4.5.2 Configuration notifications

This subclause presents a list of notifications, defined in TS 32.662 [32], that IRPManager can receive. The notification header attribute `objectClass/objectInstance`, defined in TS 32.302 [37], would capture the DN of an instance of an IOC defined in this IRP specification.

| Name                                    | Qualifier | Notes |
|---|-----------|-------|
| <code>notifyAttributeValueChange</code> | O         |       |
| <code>notifyObjectCreation</code>       | O         |       |
| <code>notifyObjectDeletion</code>       | O         |       |

# Annex A (informative): Notifications during a Cell Outage Compensation

The following sequence diagrams and table show an example how notifications of IOC CellOutageCompensationInformation and other notifications are used to inform an IRPManager about the COC activities.

The sequence diagrams show the basic event flow, the table gives more details on selected, most relevant, content of the notifications.

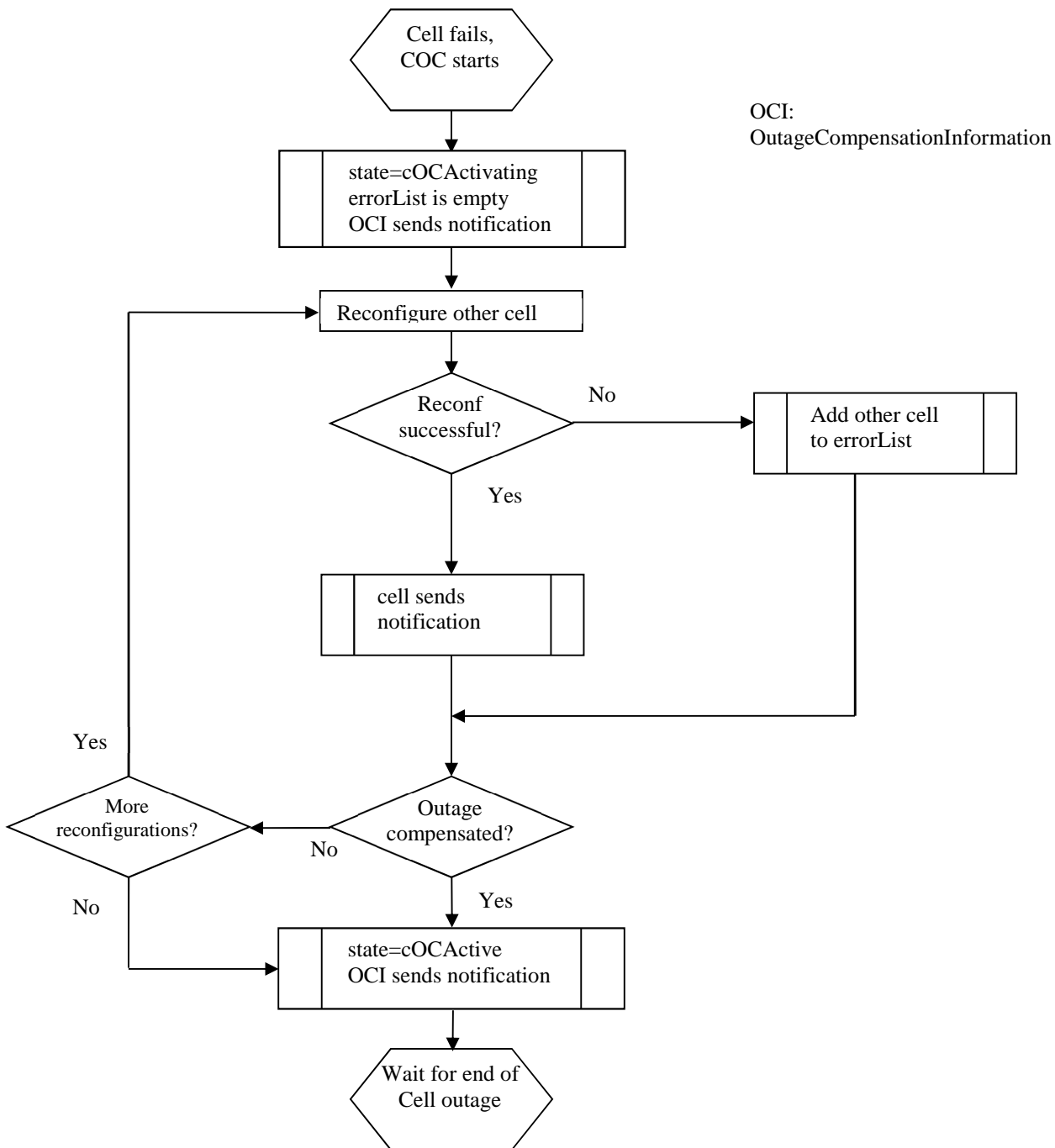


Figure A-1: Sequence diagram of COC, part 1

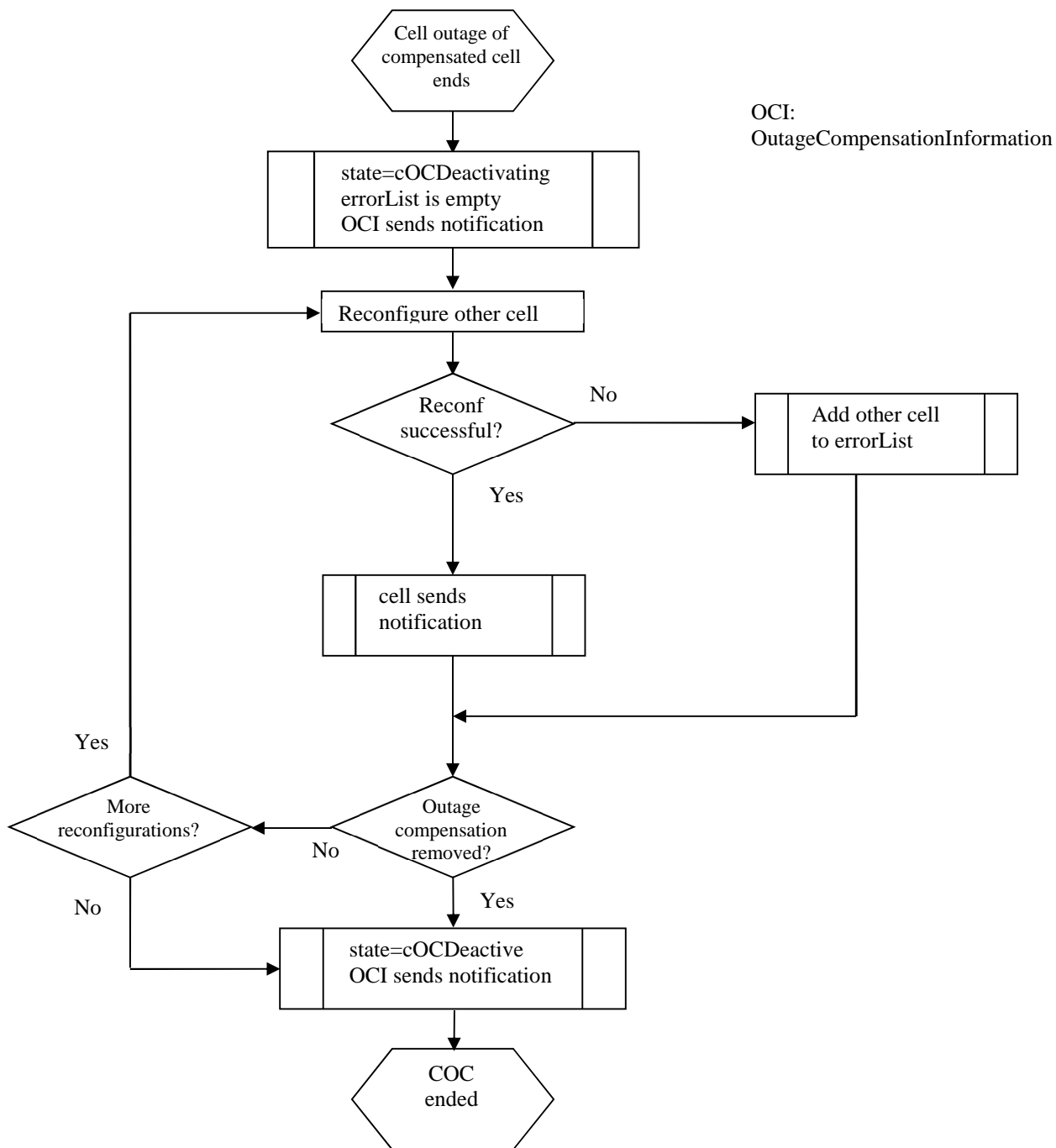


Figure A-2: Sequence diagram of COC, part 2

Legend for the table:

Notifications in *italic font* are not directly triggered by COC activities, but help to give a full picture.:

Notification content in **bold font** indicates a changed attribute value.

| Time | Event  | Notification   | Selected notification content *)   |
|------|--|--|--|
| T1   | Outage of cell 1. COC is done for this cell. | <i>notifyNewAlarm, originated by EUTranGenericCell instance representing cell 1</i><br><br><i>notifyAttributeValueChange of CellOutageCompensationIn</i> | notificationId=notiAlCell1<br>correlatedNotifications={ }<br><br>notificationId=COC1<br>correlatedNotifications={ notiAlCell1 };<br><b>cOCStatus.state = cOCActivating</b> |

| Time                        | Event  | Notification   | Selected notification content *)  |
|-----------------------------|--|--|---|
|                             |  | formation instance name contained in EUTranGenericCell instance representing cell 1.   | cOCStatus.errorList={}  |
| T2                          | COC reconfigures cell 2                                      | notifyAttributeValueChange of EUTranGenericCell instance representing cell 2   | notificationId=avcCell2comp<br>correlatedNotifications={ COC1 }   |
| T3                          | COC reconfigures cell 3                                      | notifyAttributeValueChange of EUTranGenericCell instance representing cell 3   | notificationId= avcCell3comp<br>correlatedNotifications={ COC1 }  |
| T4                          | COC tries to reconfigure cell 4 without success              | notifyAttributeValueChange of CellOutageCompensationInformation instance name contained in EUTranGenericCell instance representing cell 1  | notificationId=COC2<br>correlatedNotifications={ COC1 }<br>cOCStatus.state = <b>cOCCActivating</b><br>cOCStatus.errorList={ cell4 }   |
| <b>Case: COC successful</b> |  |  |   |
| T5a                         | COC function decides, that no further actions are necessary. | notifyAttributeValueChange of CellOutageCompensationInformation instance contained in EUTranGenericCell instance representing cell 1   | notificationId=COC5a<br>correlatedNotifications={ COC1 }<br>cOCStatus.state = <b>cOCActive</b><br>cOCStatus.errorList={ cell4 }   |
| T6a                         | Outage of cell 1 ends  | <i>notifyClearedAlarm, originated by EUTranGenericCell instance representing cell 1</i><br><br>notifyAttributeValueChange of CellOutageCompensationInformation instance name contained in EUTranGenericCell instance representing cell 1 | <i>notification Id= clearAlCell1</i><br><i>correlatedNotifications={ notiAlCell1, COC1 }</i><br><br>Notification Id=COC6a<br>correlatedNotifications={ COC1, COC5a, clearAlCell1 }<br>cOCStatus.state = <b>cOCDeactivating</b><br>cOCStatus.errorList={ } |
| T7a                         | COC tries to reconfigure cell 2 without success              | In case of unsuccessful reconfiguration:<br>notifyAttributeValueChange of CellOutageCompensationInformation instance name contained in EUTranGenericCell instance representing cell 1  | Notification Id=COC7a<br>correlatedNotifications={ COC1, COC5a, COC6a, clearAlCell1 }<br>cOCStatus.state=<br><b>cOCDeactivating;</b><br>cOCStatus.errorList={ <b>cell2</b> }  |
| T8a                         | COC reconfigures cell 3                                      | notifyAttributeValueChange of EUTranGenericCell instance representing cell 3<br><br>notifyAttributeValueChange of CellOutageCompensationInformation instance name  | notification Id= avcCell3decomp<br>correlatedNotifications={ COC1, COC5a, avcCell3comp }<br><br>Notification Id=COC8a<br>correlatedNotifications={ COC1, clearAlCell1 }<br>cOCStatus.state= <b>cOCDeactive</b>  |

| Time                            | Event  | Notification   | Selected notification content *)   |
|---------------------------------|--|--|--|
|                                 |  | contained in<br>EUTranGenericCell instance<br>representing cell 1.   | cOCStatus.errorList={ cell2 }  |
| <b>Case: COC not successful</b> |  |  |  |
| T5b                             | COC function decides, that<br>compensation was not<br>successful | notifyAttributeValueChange of<br>CellOutageCompensationIn<br>formation instance name<br>contained in<br>EUTranGenericCell instance<br>representing cell 1  | Notification Id=COC5b<br>correlatedNotifications={ COC1 }<br>cOCStatus.state= <b>cOCActive</b><br>cOCStatus.errorList={ cell4 }  |
| T6b                             | Outage of cell 1 ends  | <i>notifyClearedAlarm, originated by<br/>EUTranGenericCell instance<br/>representing cell 1</i><br><br>notifyAttributeValueChange of<br>CellOutageCompensationIn<br>formation instance name<br>contained in<br>EUTranGenericCell instance<br>representing cell 1 | <i>notification Id= clearAlCell1<br/>correlatedNotifications={ notiAlCell1,<br/>COC1 }</i><br><br>Notification Id=COC6b<br>correlatedNotifications={ COC1,<br>clearAlCell1 }<br>cOCStatus.state= <b>cOCDeactivating</b><br>cOCStatus.errorList={ } |
| T7b                             | COC reconfigures cell 2  | notifyAttributeValueChange of EUTranGenericCell<br>instance representing cell 2  | notification Id= avcCell2decomp<br>correlatedNotifications={ COC1, COC5b,<br>avcCell2comp }  |
| T8b                             | COC reconfigures cell 3  | notifyAttributeValueChange of EUTranGenericCell<br>instance representing cell 3<br><br>notifyAttributeValueChange of<br>CellOutageCompensationIn<br>formation instance name<br>contained in<br>EUTranGenericCell instance<br>representing cell 1.                | notification Id= avcCell3decomp<br>correlatedNotifications={ COC1, COC5b,<br>avcCell3comp }<br><br>Notification Id=COC8b<br>correlatedNotifications={ COC1,<br>clearAlCell1 }<br>cOCStatus.state= <b>cOCDeactive</b><br>cOCStatus.errorList={ }    |

\*) Remarks:

There may be some content of the correlatedNotifications and/or additionalInformation field, which is not related to COC. This additional content is not shown for better readability and must be kept unchanged by COC.

NotificationId's are only examples.

## Annex B (informative): Change history

| Change history |       |           |     |     |   |        |        |
|----------------|-------|-----------|-----|-----|---|--------|--------|
| Date           | TSG # | TSG Doc.  | CR  | Rev | Subject/Comment   | Old    | New    |
| 2012-11        |       |           |     |     | First draft   |        | 0.1.0  |
| 2012-12        | SA#58 |           |     |     | Presented for information and approval                              | 0.1.0  | 1.0.0  |
| 2012-12        |       |           |     |     | New version after approval  | 1.0.0  | 11.0.0 |
| 2013-03        | SA#59 | SP-130048 | 001 | 1   | Rel 11 CR 28658 - Correction of attribute name relatedSector        | 11.0.0 | 11.1.0 |
|                |       | SP-130057 | 002 | 1   | CR R11 28.658 Addition of missing Network Sharing support for MDT   |        |        |
| 2013-06        | SA#60 | SP-130304 | 003 | 1   | Energy saving synchronization with 32.762                           | 11.1.0 | 11.2.0 |
|                |       |           | 004 | 2   | Align the link inheritance with 28.622                              |        |        |
| 2013-12        | SA#62 | SP-130614 | 006 | 1   | Add blacklist member  | 11.2.0 | 11.3.0 |
| 2014-06        | SA#64 | SP-140359 | 008 | -   | remove the feature support statements                               | 11.3.0 | 11.4.0 |
| 2014-09        | SA#65 | SP-140558 | 009 | -   | Align operationalState and other state attribute definitions        | 11.4.0 | 11.5.0 |
| 2014-10        |       |           |     |     | Automatic upgrade (MCC)   | 11.5.0 | 12.0.0 |
| 2014-12        | SA#66 | SP-140798 | 011 | 1   | Add missing OAM support for radio interface based synchronization - | 12.0.0 | 12.1.0 |
|                |       |           |     |     | Align with TS 36.300  |        |        |
| 2015-12        | SA#70 | SP-150691 | 013 | 1   | Align id attribute definitions                                      | 12.1.0 | 12.2.0 |
| 2016-01        | SA#70 |           |     |     | Upgrade to Rel-13(MCC)  | 12.2.0 | 13.0.0 |

| Change history |         |           |      |     |     |  |             |
|----------------|---------|-----------|------|-----|-----|--|-------------|
| Date           | Meeting | TDoc      | CR   | Rev | Cat | Subject/Comment  | New version |
| 2016-06        | SA#72   | SP-160419 | 0016 | 1   | B   | Adding NB-IoT cell type attribute in EUTranGenericCell IOC                 | 13.1.0      |
| 2017-03        | SA#75   | -         | -    | -   |     | Promotion to Release 14 without technical change                           | 14.0.0      |
| 2017-09        | SA#77   | SP-170653 | 0019 | 2   | B   | Support E-UTRAN new sharing arrangement                                    | 14.1.0      |
| 2018-01        | SA#78   | SP-170968 | 0020 | 1   | B   | Add attribute of E-UTRAN cell IOC to support SON for AAS management        | 15.0.0      |
| 2018-06        | SA#80   | SP-180421 | 0021 | 1   | B   | Update E-UTRAN IS definitions to support EN-DC management                  | 15.1.0      |
| 2018-09        | SA#81   | SP-180828 | 0028 | 2   | B   | Update E-UTRAN IS definitions to support ng-eNB management                 | 15.2.0      |
| 2018-09        | SA#81   | SP-180829 | 0030 | 1   |     | Changes for EPC CUPS in E-UTRAN NRM  | 15.2.0      |
| 2018-09        | SA#81   | SP-180830 | 0031 | -   | F   | Wrong terminology  | 15.2.0      |
| 2018-12        | SA#82   | SP-181156 | 0032 | 1   | F   | Update Figure 4.2.1-3 Transport view of E-UTRAN and ng-eNB NRM             | 15.3.0      |
| 2018-12        | SA#82   | SP-181156 | 0033 | 1   | B   | Add IOC for supporting management of non-collocated LWA                    | 16.0.0      |
| 2018-12        | SA#82   | SP-181049 | 0035 | 3   | B   | Add WLANMobilitySet IOC  | 16.0.0      |
| 2019-03        | SA#83   | SP-190124 | 0042 | 1   | B   | Enhance ENBFunction for LWIP management                                    | 16.1.0      |
| 2019-03        | SA#83   | SP-190126 | 0043 | 1   | A   | Correct PLMN ID List Type in Stage 2                                       | 16.1.0      |
| 2019-03        | SA#83   | SP-190132 | 0048 | -   | A   | Resolution of Editor's note  | 16.1.0      |
| 2019-03        | SA#83   | SP-190134 | 0049 | 1   | F   | Correct PLMN ID data type definition                                       | 16.1.0      |
| 2019-12        | SA#86   | SP-191173 | 0050 | 1   | A   | Add missing (E-UTRAN) cell and freq relation                               | 16.2.0      |
| 2020-07        | SA#88-e | SP-200489 | 0052 | 1   | F   | Update NRM attribute definitions   | 16.3.0      |
| 2020-12        | SA#90e  | SP-201064 | 0054 | -   | A   | Add missing inheritance diagram for EUTranFrequency and EUTranFreqRelation | 16.4.0      |
| 2021-12        | SA#94e  | SP-211465 | 0055 | -   | B   | Update the attribute sNSSAList to align with NR NRM                        | 17.0.0      |
| 2021-12        | SA#94e  | SP-211465 | 0056 | -   | B   | Align the attribute table with the latest template                         | 17.0.0      |
| 2022-06        | SA#96   | SP-220593 | 0061 | -   | F   | Non-inclusive language correction  | 17.1.0      |
| 2024-12        | SA#106  | SP-241633 | 0066 |     | F   | Rel-17 CR TS 28.658 Correction of attribute properties                     | 17.2.0      |



---

# History

| <b>Document history</b> |              |             |
|-------------------------|--------------|-------------|
| V17.0.0                 | May 2022     | Publication |
| V17.1.0                 | July 2022    | Publication |
| V17.2.0                 | January 2025 | Publication |
|                         |              |             |
|                         |              |             |