



**Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Generic Radio Access Network (RAN)
Network Resource Model (NRM)
Integration Reference Point (IRP);
Requirements
(3GPP TS 28.661 version 19.0.0 Release 19)**



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Foreword

This Technical Specification has been produced by the 3rd 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 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

28.661 Generic Radio Access Network (RAN) Network Resource Model (NRM); Integration Reference Point (IRP); Requirements

28.662 Generic Radio Access Network (RAN) Network Resource Model (NRM); Integration Reference Point (IRP); Information Service (IS)

28.663 Generic Radio Access Network (RAN) Network Resource Model (NRM); Integration Reference Point (IRP); Solution Set (SS) definitions

1 Scope

The present document defines, in addition to the requirements defined in TS 32.101 [2], TS 32.102 [3] and TS 32.600 [4], the Requirements for the common and generic radio access network equipments that may be shared between BSS in GSM, UTRAN and E-UTRAN.

The present document can be used also for managing the equipment that can be shared by several RATs, even in the cases when it is not being shared.

2 References

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

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

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".
- [3] 3GPP TS 32.102: "Telecommunication management; Architecture".
- [4] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".
- [5] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".
- [6] 3GPP TS 32.107: "Telecommunication management; Fixed Mobile Convergence (FMC) Federated Network Information Model (FNIM)".
- [7] 3GPP TS 28.620: "Telecommunication management; Fixed Mobile Convergence (FMC) Federated Network Information Model (FNIM) Umbrella Information Model (UIM)".
- [8] 3GPP TS 25.106: "UTRA repeater radio transmission and reception".
- [9] 3GPP TS 36.106: "FDD repeater radio transmission and reception".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 32.150 [5], TS 32.101 [2], TS 32.102 [3] and TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TS 32.150 [5], TS 32.101 [2], TS 32.102 [3] and TR 21.905 [1], in this order.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

CAPEX Capital Expenditure

4 Requirements

It is common that operators operate more than one RAT. To save CAPEX, some radio equipment can be shared between the different RATs. Radio equipment can also be shared within a RAT. This NRM makes it easy to operate such shared radio equipment and to understand the consequences in all affected RATs when a change is made in a shared equipment.

The following general and high-level requirement applies for the present IRP:

- a) IRP-related requirements in TS 32.101 [2].
- b) IRP-related requirements in TS 32.102 [3].
- c) IRP-related requirements in TS 32.600 [4].

The NRM defined by this IRP:

- d) Shall support communications for telecommunication network management purposes, including management of converged networks.
- e) Is a member of the Federated Network Information Model (FNIM) TS 32.107 [6] and its information is derived from FNIM Umbrella Information Model (UIM) TS 28.620 [7].

In addition, the following more specific requirements apply:

REQ-GRAN_NRM-CON-001: The NRM defined by this IRP shall contain IOCs and related definitions, supporting equipment that may be shared between BSS, UTRAN and E-UTRAN networks.

REQ-GRAN_NRM-CON-002: The IRP Agent shall support a capability allowing the IRP Manager to know which RATs are served by each managed object.

REQ-GRAN_NRM-CON-003: The IRP Agent shall support a capability allowing the IRP Manager to perform basic configuration and retrieve inventory information of repeater (see TS 25.106 [8] for UMTS and TS 36.106 [9] for LTE).

Annex A (informative): Change history

Change history								
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Cat	Old	New
2013-09	SA#61	SP-130433	001	3	Add missing Repeater Object requirements definitions	F	11.0.0	11.1.0
2014-06	SA#64	SP-140359	002	-	remove the feature support statements	F	11.1.0	11.2.0
2014-10	-	-	-	-	Update to Rel-12 version (MCC)		11.2.0	12.0.0
2016-01	-	-	-	-	Update to Rel-13 version (MCC)		12.0.0	13.0.0
2017-03	SA#75	-	-	-	Promotion to Release 14 without technical change		13.0.0	14.0.0

Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2018-06						Upgrade to Rel-15 version (MCC)	15.0.0
2020-07	-	-	-	-		Update to Rel-16 version (MCC)	16.0.0
2022-03	-	-	-	-		Update to Rel-17 version (MCC)	17.0.0
2024-04	-	-	-	-		Update to Rel-18 version (MCC)	18.0.0
2025-09	SA#109	SP-251081	0005	1	A	Rel-18 CR 28.661 Alignment with 36.106	18.1.0
2025-09	SA#109	-	-	-		Update to Rel-19 version (MCC)	19.0.0

History

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V19.0.0	October 2025	Publication