



**Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Universal Terrestrial Radio Access Network (UTRAN)
Network Resource Model (NRM)
Integration Reference Point (IRP);
Solution Set (SS) definitions
(3GPP TS 28.653 version 16.0.0 Release 16)**



Reference

RTS/TSGS-0528653vg00

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 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

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 at www.etsi.org/deliver.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommiteeSupportStaff.aspx>

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 2020.

All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.

3GPP™ and **LTE™** 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.

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is 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 Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI IPR Policy, no investigation, 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.

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 under <http://webapp.etsi.org/key/queryform.asp>.

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.....	5
Introduction	5
1 Scope	6
2 References	6
3 Definitions and abbreviations.....	6
3.1 Definitions	6
3.2 Abbreviations	7
4 Solution Set Definitions	7
Annex A (normative): CORBA Solution Set	9
A.0 Introduction	9
A.1 Architectural features	9
A.1.0 General	9
A.1.1 Syntax for Distinguished Names	9
A.1.2 Rules for NRM extensions	9
A.2 Mapping	10
A.2.1 General mapping	10
A.2.2 Information Object Class (IOC) mapping	10
A.2.2.1 IOC RncFunction	10
A.2.2.2 IOC UtranGenericCell	11
A.2.2.3 IOC NodeBFunction	13
A.2.2.4 IOC IubLink.....	13
A.2.2.5 IOC ExternalUtranGenericCell.....	14
A.2.2.6 Void	15
A.2.2.7 IOC ExternalRncFunction	15
A.2.2.8 UtranCellFDD	15
A.2.2.9 UtranCellTDD	16
A.2.2.10 UtranCellTDDLcr	16
A.2.2.11 UtranCellTDDHcr	17
A.2.2.12 ExternalUtranCellFDD	17
A.2.2.13 ExternalUtranCellTDD	18
A.2.2.14 ExternalUtranCellTDDHcr	18
A.2.2.15 ExternalUtranCellTDDLcr	18
A.2.2.16 IOC UtranRelation	19
A.2.2.17 IOC EP_IuCS.....	19
A.2.2.18 IOC EP_IuPS	19
A.2.2.19 IOC EP_Iur	19
A.3 Solution Set definitions	20
A.3.1 IDL definition structure	20
A.3.2 IDL specification "UtranNetworkResourcesNRMDefs.idl"	20
Annex B (normative): XML Definitions	27
B.0 Introduction	27
B.1 Architectural features	27
B.1.0 General	27
B.1.1 Syntax for Distinguished Names	27

B.2	Mapping	27
B.2.1	General mapping	27
B.2.2	Information Object Class (IOC) mapping	27
B.3	Solution Set definitions	28
B.3.1	XML definition structure	28
B.3.2	Graphical Representation	28
B.3.3	XML schema "utranNrm.xsd"	29
Annex C (informative):	Change history	50
History		51

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Full standard:
<https://standards.iteh.ai/catalog/standards/sist/731a29a3-2bc0-47fe-b972-e1ae7ca7ef7a/etsi-ts-128-653-v16.0.0-2020-08>

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:

- 28.651: "UTRAN Network Resource Model (NRM) Integration Reference Point (IRP); Requirements".
- 28.652: "UTRAN Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".
- 28.653: "UTRAN Network Resource Model (NRM) Integration Reference Point (IRP); Solution Set (SS) definition".**

1 Scope

The present document specifies the Solution Sets for the UTRAN NRM IRP.

This Solution Set specification is related to 3GPP TS 28.652 V14.0.X [4].

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 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".
- [4] 3GPP TS 28.652: "Telecommunication management; Universal Terrestrial Radio Access Network (UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".
- [5] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".
- [6] 3GPP TS 32.306: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP); Solution Set (SS) definitions".
- [7] 3GPP TS 32.616: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP); Solution Set (SS) definitions".
- [8] W3C REC-xml11-20060816: "Extensible Markup Language (XML) 1.1 (Second Edition)".
- [9] Void
- [10] W3C XML Schema Definition Language (XSD) 1.1 Part 1: Structures.
- [11] W3C XML Schema Definition Language (XSD) 1.1 Part 2: Datatypes.
- [12] W3C REC-xml-names-20060816: "Namespaces in XML 1.1 (Second Edition)".
- [13] 3GPP TS 28.623: "Generic Network Resource Model (NRM) Integration Reference Point (IRP); Solution Set (SS) definition".

3 Definitions and abbreviations

3.1 Definitions

For terms and definitions please refer to 3GPP TS 32.101 [1], 3GPP TS 32.102 [2], 3GPP TS 32.600 [3] and 3GPP TS 28.652 [4].

XML file: See definition of [13].

XML document: See definition of [13].

XML declaration: See definition of [13].

XML element: See definition of [13].

empty XML element: See definition of [13].

XML content (of an XML element): See definition of [13].

XML start-tag: See definition of [13].

XML end-tag: See definition of [13].

XML empty-element tag: See definition of [13].

XML attribute specification: See definition of [13].

DTD: See definition of [13].

XML schema: See definition of [13].

XML namespace: See definition of [13].

XML complex type: See definition of [13].

XML element type: See definition of [13].

3.2 Abbreviations

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

CM	Configuration Management
CORBA	Common Object Request Broker Architecture
DN	Distinguished Name
DTD	Document Type Definition
EDGE	Enhanced Data for GSM Evolution
GERAN	GSM/EDGE Radio Access Network
GSM	Global System for Mobile communication
IS	Information Service
IDL	Interface Definition Language (OMG)
IOC	Information Object Class
IRP	Integration Reference Point
IS	Information Service
MO	Managed Object
MOC	Managed Object Class
NRM	Network Resource Model
OMG	Object Management Group
SIPTO	Selected IP Traffic Offload
SS	Solution Set
UMTS	Universal Mobile Telecommunications System
UTRAN	Universal Terrestrial Radio Access Network
XML	eXtensible Markup Language

4 Solution Set Definitions

This specification defines the following 3GPP UTRAN NRM IRP Solution Set Definitions:

- 3GPP UTRAN NRM IRP CORBA SS (Annex A)
- 3GPP UTRAN NRM IRP XML Definitions (Annex B)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Full standard:
<https://standards.iteh.ai/catalog/standards/sist/731a29a3-2bc0-47fe-b972-e1ae7ca7ef7a/etsi-ts-128-653-v16.0.0-2020-08>

Annex A (normative): CORBA Solution Set

A.0 Introduction

This annex contains the CORBA Solution Set for the IRP whose semantics is specified in UTRAN NRM IRP: Information Service (TS 28.652 [4]).

A.1 Architectural features

A.1.0 General

The overall architectural feature of UTRAN Network Resources IRP is specified in 3GPP TS 28.652 [4]. This clause specifies features that are specific to the CORBA SS.

A.1.1 Syntax for Distinguished Names

See clause A.1.1 of [13].

A.1.2 Rules for NRM extensions

See clause A.1.2 of [13].

ITeH STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/731a29a3-2bc0-47fe-b972-e1ae7ca7ef7a/etsi-ts-128-653-v16.0.0-2020-08>

A.2 Mapping

A.2.1 General mapping

See clause A.1.2.1 of [13].

A.2.2 Information Object Class (IOC) mapping

A.2.2.1 IOC RncFunction

Mapping from NRM IOC RncFunction attributes to SS equivalent MOC RncFunction attributes

IS Attributes	SS Attributes	SS Type
mcc	mcc	long
mnc	mnc	long
rncId	rncId	long
siptoSupported	siptoSupported	short
tceIDMappingInfoList	tceIDMappingInfoList	GenericNRMAAttributeTypes:: TceIDMappingInfoListType
sharNetTceMappingInfoList	sharNetTceMappingInfoList	genericEUTRANNRMAttributeTypes:: SharNetTceMappingInfo

iTech STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/7127127-2020-08>
2bc0-47fe-b972-e1ae7ca7ef7a/etsi-ts-128-653-v16.0.0-2020-08

A.2.2.2 IOC UtranGenericCell

Mapping from NRM IOC UtranGenericCell attributes and associations to SS equivalent MOC UtranGenericCell attributes

iTech STANDARD PREVIEW
(standards.itech.ai)
Full standard:
<https://standards.itech.ai/catalog/standards/sist/731a29a3-2bc0-47fe-b972-e1ae7ca7e77a/etsi-ts-128-653-v16.0.0-2020-08>

IS Attributes	SS Attributes	SS Type
cId	cId	long
localCellId	localCellId	long
relatedAntennaList	relatedAntennaList	GenericNetworkResourcesIRPSSystem::AttributeTypes::MOReferenceSet
maximumTransmissionPower	maximumTransmissionPower	short
lac	lac	long
pichPower	pichPower	float
pchPower	pchPower	float
fachPower	fachPower	float
rac	rac	long
sac	sac	long
uraList	uraList	GenericNetworkResourcesIRPSSystem::AttributeTypes::LongSet
associatedWith/ utranCell-IubLink	utranCellIubLink	GenericNetworkResourcesIRPSSystem::AttributeTypes::MOReference
cellMode	cellMode	GenericNRMAAttributeTypes::CellModeEnumType
operationalState	operationalState	StateManagementIRPOptConstDefs::OperationalStateTypeOpt
hsFlag	hsFlag	short
hsEnable	hsEnable	short
numOfHspdschs	numOfHspdschs	short
numOfHsscchs	numOfHsscchs	short
frameOffset	frameOffset	short
cellIndividualOffset	cellIndividualOffset	float
hcsPrio	hcsPrio	short
maximumAllowedULTxPower	maximumAllowedULTxPower	short
snaInformation	snaInformation	GenericNRMAAttributeTypes::snaInformationType
qrxlevMin	qrxlevMin	short
deltaQrxlevmin	deltaQrxlevmin	short
qhcs	qhcs	short
penaltyTime	penaltyTime	short
referenceTimeDifferenceToCell	referenceTimeDifferenceToCell	short
readSFNIndicator	readSFNIndicator	Boolean
restrictionStateIndicator	restrictionStateIndicator	GenericNRMAAttributeTypes::restrictionStateEnumType
dpcModeChangeSupportIndicator	dpcModeChangeSupportIndicator	GenericNRMAAttributeTypes::dpcModeChangeSupportEnumType
relatedTmaList	relatedTmaList	GenericNetworkResourceIRPSSystem::AttributeTypes::MOReferenceSet
relatedSectorEquipment	relatedSectorEquipment	GenericNetworkResourceIRPSSystem::AttributeTypes::MOReference
nsPlmnIdList	nsPlmnIdList	GenericNRMAAttributeTypes::NsPlmnIdListType