ETSI TS 132 602 V15.1.0 (2019-10)

**Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Configuration Management (CM);
Basic CM Integration Reference Point (IRP);
Information Service (IS)
(3GPP TS 32.602 version 15.1.0 Release 15)**

Reference
RTS/TSGS-0532602vf10

Keywords
GSM,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

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

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:

32.601: "Configuration Management (CM); Basic CM Integration Reference Point (IRP); Requirements"

32.602: "Configuration Management (CM); Basic CM Integration Reference Point (IRP): Information Service (IS)"

32.606: "Configuration Management (CM); Basic CM Integration Reference Point (IRP); Solution Set (SS) definitions"

Configuration Management (CM), in general, provides the operator with the ability to assure correct and effective operation of the 3G network as it evolves. CM actions have the objective to control and monitor the actual configuration on the Network Elements (NEs) and network resources , and they may be initiated by the operator or by functions in the Operations Systems (OSs) or NEs.

CM actions may be requested as part of an implementation programme (e.g. additions and deletions), as part of an optimisation programme (e.g. modifications), and to maintain the overall Quality of Service (QoS). The CM actions are initiated either as single actions on single NEs of the 3G network, or as part of a complex procedure involving actions on many resources/objects in one or several NEs.

1 Scope

The present document defines a component of an Integration Reference Point (IRP) through which an 'IRPAgent' (typically an Element Manager or Network Element) can communicate basic Configuration Management related information to one or several 'IRPManagers' (typically Network Managers).

The function of this Basic CM IRP Information Service is to define an interface for the retrieval and modification of Configuration Management Information.

This Basic CM IRP IS is aligned with ITU-T M.3700 [15] in that ITU-T M.3700 is a subset of the Basic CM IRP IS in terms of the definitions of operations for the retrieval and modification of Configuration Management Information.

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.

[1] 3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".

[2] 3GPP TS 32.102: "Telecommunication management; Architecture".

[3] Void

[4] 3GPP TS 32.312: "Telecommunication management; Generic Integration Reference Point (IRP) management; Information Service (IS)".

[5] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".

[6] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

[7] ITU-T Recommendation X.710 (1997): "Common Management Information Service".

[8] Void

[9] Void

[10] Void

[11] 3GPP TS 32.662: "Telecommunication management; Configuration Management (CM); Kernel CM Information Service (IS)".

[12] Void

[13] Void

[14] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".

[15] ITU-T M.3700 (01/2010): "Telecommunication Management, Including TMN and Network Maintenance; Integrated services digital networks; Common management services – Object management – Protocol neutral requirements and analysis".

[16] 3GPP TS 28.622: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

[17] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [17], 3GPP TS 32.101 [1], 3GPP TS 32.102 [2] and 3GPP TS 32.600 [6] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [17], 3GPP TS 32.101 [1], 3GPP TS 32.102 [2] and 3GPP TS 32.600 [6].

Association: Association used to model relationships between Managed Objects.

NOTE 1: Associations can be implemented in several ways, such as:

a) name bindings,

b) reference attributes, and

c) association objects.

This IRP stipulates that containment associations shall be expressed through name bindings, but it does not stipulate the implementation for other types of associations as a general rule. These are specified as separate entities in the object models (UML diagrams). Currently however, all (non-containment) associations are modelled by means of reference attributes of the participating MOs.

Managed Object (MO): software object that encapsulates the manageable characteristics and behaviour of a particular network resource.

NOTE 2: The MO is instance of a MO class defined in a MIM/NRM. An MO class has attributes that provide information used to characterize the objects that belong to the class. Furthermore, an MO class can have operations that represent the behaviour relevant for that class. An MO class may support notifications that provide information about an event occurrence within a network resource.

Management Information Base (MIB): A MIB is an instance of an NRM and has some values on the defined attributes and associations specific for that instance.

NOTE 3: In the context of the present document, an MIB consists of:

a) a Name space (describing the MO containment hierarchy in the MIB through Distinguished Names),

b) a number of Managed Objects with their attributes and

c) a number of Associations between these MOs. Also note that TMN (ITU-T Recommendation X.710 [7]) defines a concept of a Management Information Tree (also known as a Naming Tree) that corresponds to the name space (containment hierarchy) portion of this MIB definition. Figure 3.1 depicts the relationships between a Name space and a number of participating MOs (the shown association is of a non-containment type)

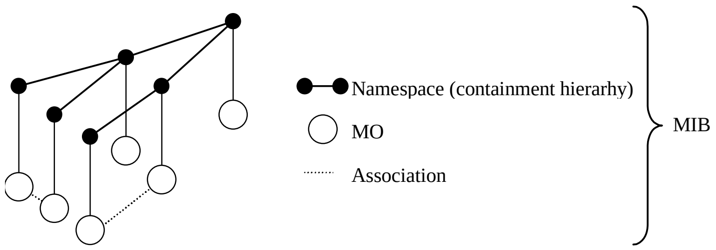

Figure 3.1: Relationships between a Name space and a number of participating MOs

Name space: A name space is a collection of names. The IRP name convention (see 3GPP TS 32.300 [5]) restricts the name space to a hierarchical containment structure, including its simplest form - the one-level, flat name space.
All Managed Objects in a MIB shall be included in the corresponding name space and the MIB/name space shall only support a strict hierarchical containment structure (with one root object). A Managed Object that contains another is said to be the superior (parent); the contained Managed Object is referred to as the subordinate (child). The parent of all MOs in a single name space is called a Local Root. The ultimate parent of all MOs of all managed systems is called the Global Root.

Network resource: See definition in 3GPP TS 28.622 [16].

Network Resource Model (NRM): See definition in 3GPP TS 28.622 [16].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 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 3GPP TR 21.905 [17].

DN	Distinguished Name (see 3GPP TS 32.300 [5])
MO	Managed Object
RDN	Relative Distinguished Name (see 3GPP TS 32.300 [5])
SS	Solution Set

4 System overview

4.1 System Context

The general definition of the System Context for the present IRP is found in 3GPP TS 32.150 [14] subclause 4.7.

In addition, the set of related IRP(s) relevant to the present IRP is shown in the two diagrams below.

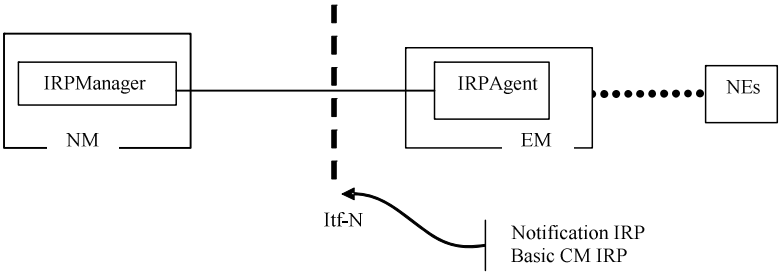

Figure 4.1: System Context A

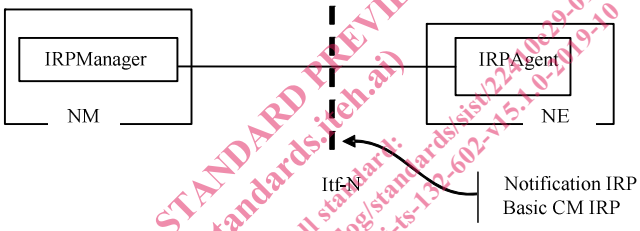

Figure 4.2: System Context B

4.2 Compliance rules

For general definitions of compliance rules related to qualifiers (Mandatory/Optional/Conditional) for *operations*, *notifications and parameters* (of operations and notifications) please refer to 3GPP TS 32.150 [14].

An IRPAgent that incorporates vendor-specific extensions shall support normal communication with a 3GPP SA5-compliant IRPManager with respect to all Mandatory and Optional managed object classes, attributes, associations, operations, parameters and notifications without requiring the IRPManager to have any knowledge of the extensions.

Given that

- rules for vendor-specific extensions remain to be fully specified, and
- many scenarios under which IRPManager and IRPAgent interwork may exist,

it is recognised that the IRPManager, even though it is not required to have knowledge of vendor-specific extensions, may be required to be implemented with an awareness that extensions can exist and behave accordingly.

5 Modelling approach

See 3GPP TS 32.150 [14].

6 Model

6.1 Imported information entities and local labels

Label reference	Local label
32.312 [4], information object class, `ManagedGenericIRP`	`ManagedGenericIRP`