ETSI TS 132 741 V11.0.0 (2012-11)

Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Configuration Management (CM);
Signalling Transport Network (STN)
interface Network Resource Model (NRM)
Integration Reference Point (IRP);
Requirements
(3GPP TS 32.741 version 11.0.0 Release 11)

Reference
RTS/TSGS-0532741vb00

Keywords
GSM,LTE,UMTS

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Foreword

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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:

32.741:	**Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Requirements**
32.742:	Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)
32.746:	Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) 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 (NRs), 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 , in addition to the requirements defined in [1], [2] and [3], the requirements for the Signalling Transport Network (STN) interface NRM IRP.

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 29.202: "Signalling System No. 7 (SS7) signalling transport in core network; Stage 3".

[5] ITU-T Recommendation Q.751.1 (10/95): "Network Element Management Information Model for The Message Transfer Part (MTP)".

[6] ITU-T Recommendation M.3100 (07/95): "Generic Network Information Model".

[7] ITU-T Recommendation Q.704 (07/96): "Signalling network functions and messages".

[8] ITU-T Recommendation Q.702 (11/88): "Signalling Data Link".

[9] Void.

[10] 3GPP TS 32.405: "Telecommunication management; Performance Management (PM); Performance measurements Universal Terrestrial Radio Access Network (UTRAN)".

[11] IETF RFC 3332: "Signalling System 7 (SS7) Message Transfer Part 3 (MTP3) - User Adaptation Layer (M3UA).

[12] 3GPP TS 32.150: "Telecommunication management; Integration Reference Point (IRP) Concept and definitions".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

Integration Reference Point (IRP): see 3GPP TS 32.150 [12].

Managed Object (MO): an abstract entity, which may be accessed through an open interface between two or more systems, and representing a Network Resource (NR) for the purpose of management. The Managed Object (MO) is an

instance of a Managed Object Class (MOC) as defined in a Management Information Model (MIM). The MIM does not define how the MO or NR is implemented; only what can be seen in the interface.

Managed Object Class (MOC): a description of all the common characteristics for a number of MOs, such as their attributes, operations, notifications and behaviour.

Management Information Model (MIM): also referred to as NRM - see the definition below. There is a slight difference between the meaning of MIM and NRM - the term MIM is generic and can be used to denote any type of management model, while NRM denotes the model of the actual managed telecommunications Network Resources (NRs).

Network Element (NE): is a discrete telecommunications entity, which can be, managed over a specific interface e.g. the RNC.

Network Resource (NR): is a component of a NE, which can be identified as a discrete separate entity and is in an object oriented environment for the purpose of management represented by an abstract entity called Managed Object (MO).

Network Resource Model (NRM): a model representing the actual managed telecommunications Network Resources (NRs) that a System is providing through the subject IRP. An NRM describes Managed Object Classes (MOC), their associations, attributes and operations. The NRM is also referred to as "MIM" (see above) which originates from the ITU-T TMN.

Operations System (OS): indicates a generic management system, independent of its location level within the management hierarchy.

Termination Point: see ITU-T M.3100 [6].

3.2 Abbreviations

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

ATM	Asynchronous Transfer Mode
CM	Configuration Management
CN	Core Network
CS	Circuit Switched
GSM	Global System for Mobile communication
IP	Internet Protocol
IRP	Integration Reference Point
ITU-T	International Telecommunication Union, Telecommunication Standardisation Sector
MIB	Management Information Base
MIM	Management Information Model
MO	Managed Object
MOC	Managed Object Class
MTP	Message Transfer Part
NE	Network Element
NR	Network Resource
NRM	Network Resource Model
OS	Operations System
PS	Packet Switched
QoS	Quality of Service
RNC	Radio Network Controller
STN	Signalling Transport Network
UMTS	Universal Mobile Telecommunications System
UTRAN	UMTS Terrestrial Radio Access Network

4 Requirements

The following general and high-level requirements apply for the present IRP:

a) IRP-related requirements in 3GPP TS 32.101 [1].

b) IRP-related requirements in 3GPP TS 32.102 [2].

c) IRP-related requirements in 3GPP TS 32.600 [3].

In addition to the above, the following more specific requirements apply.

4.1 MTP3 Configuration Management

a) It shall be possible for IRPManager to retrieve configuration information related to MTP3 signalling managed entity.

b) When the configuration information of MTP3 signalling managed entities changes, corresponding notifications shall be generated to IRPManager.

c) When the status of MTP3 signalling managed entities changes, corresponding notifications shall be generated to IRPManager.

d) It shall be possible for IRPManager to identify which technology that the STN is based on (e. g. MTP3, MTP3B [4]);

e) The interface shall allow for the viewing of parameters of the MTP3 signalling point, MTP3 signalling link set termination point, MTP3 signalling link termination point, MTP3 signalling route and MTP3 signalling route set [4], [5], [7], [8].

4.2 M3UA Configuration Management

a) It shall possible for IRPManager to retrieve configuration information related to M3UA signalling managed entities.

b) When the configuration information of M3UA signalling managed entities changes, corresponding notifications shall be generated to IRPManager.

c) When the status of M3UA signalling managed entities changes, corresponding notifications shall be generated to IRPManager.

d) The interface shall allow for the viewing of parameters of the M3UA signalling point, M3UA signalling link set termination point, M3UA signalling link termination point, M3UA signalling route and M3UA signalling route set ([4], [11]).

4.3 Fault Management

Any fault detected by the signalling managed entity (including signalling point, signalling link set termination point, signalling link termination point, signalling route and signalling route set [4], [5], [7], [8]) shall be passed up to the IRPManager.

4.4 Performance Management

It shall be possible for IRPManager to collect and monitor performance data. The detailed mesurement data to be defined in 3GPP TS 32.403 [9].

5 Issues

The NRM shall allow to be extended to support other technologies based Signalling Transport Network in the future (e.g. IP-based; see 3GPP TS 29.202 [4]).

Annex A (informative): Change history

Change history								
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Cat**	**Old**	**New**
Jun 2004	SA_24	SP-040262	--	--	Submitted to TSG SA#24 for Information	--	1.0.0	
Sep 2004	SA_25	SP-040600	--	--	Submitted to TSG SA#25 for Approval	--	2.0.0	6.0.0
Sep 2006	SA_33	SP-060554	0001	--	Add missing M3UA signalling information to the Signalling Transport Network interface NRM IRP Requirements	B	6.0.0	7.0.0
Mar 2007	SA_35	SP-070046	0002	--	Correct the wrong references	F	7.0.0	7.1.0
Dec 2008	SA_42	--	--	--	Upgrade to Release 8	--	7.1.0	8.0.0
Dec 2009	-	-	-	-	Upgrade to Release 9	--	8.0.0	9.0.0
2011-03	-	-	-	-	Update to Rel-10 version (MCC)		9.0.0	10.0.0
2012-09	-	-	-	-	-	Update to Rel-11 version (MCC)	10.0.0	**11.0.0**

History

Document history		
V11.0.0	November 2012	Publication