Source: **SA5 (Telecom Management)**

Title: **TS 32.741-100 Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP): Requirements - for SA Information**

Document for: **Information**

Agenda Item: **7.5.3**

3GPP TSG-SA5 (Telecom Management) S5-048420
Meeting #38, Beijing, China, 10-14 May 2004

Presentation of Technical Specification to TSG SA

Presentation to:	**TSG SA Meeting #24**
Document for presentation:	**TS 32.741, Version 1.0.0** **Signalling Transport Network (STN) interface** **Network Resource Model (NRM) IRP); Requirements**
Presented for:	**Information**

Abstract of document:
This TS defines the Requirements for the Signalling Transport Network (STN) Interface NRM IRP. Work done against the WID contained in SP-020754 (Work Item ID: OAM-NIM).

Purpose of These Specifications:

Signalling Transport Network is an important part of mobile network and the configuration, fault as well as performance should be managed through Itf-N. Signalling Transport Network Interface NRM IRP is defined as a capability to achieve this goal for Release 6.

The present document is part of a TS-family as identified below:

TS 32.741: **"Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Requirements".**

TS 32.742: "Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

TS 32.743: "Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Common Object Request Broker Architecture (CORBA) Solution Set (SS)".

TS 32.744: "Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Common Management Information Protocol (CMIP) Solution Set (SS)".

TS 32.745: "Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); eXtensible Markup Language (XML) file format definition".

Changes since last presentation to TSG-SA:
New.

Outstanding Issues:
None.

Contentious Issues:
None.

3GPP TS 32.741 V1.0.0 (2004-06)

Technical Specification

3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Requirements (Release 6)

Keywords
Signalling Transport Network, management

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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:

TS 32.741: "Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Requirements".

TS 32.742: "Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

TS 32.743: "Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Common Object Request Broker Architecture (CORBA) Solution Set (SS)".

TS 32.744: "Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); Common Management Information Protocol (CMIP) Solution Set (SS)".

TS 32.745: "Configuration Management (CM); Signalling Transport Network (STN) interface Network Resource Model (NRM) Integration Reference Point (IRP); eXtensible Markup Language (XML) file format definition".

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: Network Element Management Information Model for The Message Transfer Part (MTP) (10/95).

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

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

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

[9] 3GPP TS 32.403: "Telecommunication management; Performance Management (PM); Performance measurements".

3 Definitions and abbreviations

3.1 Definitions

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

IRP: see 3GPP TS 32.101 [1].

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:

1. IRP-related requirements in 3GPP TS 32.101 [1].
2. IRP-related requirements in 3GPP TS 32.102 [2].
3. IRP-related requirements in 3GPP TS 32.600 [3].

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

4.1 Configuration Management

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

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

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

d) It shall be possible for IRPManager to indentify 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 signalling point, signalling link set termination point, signalling link termination point, signalling route and signalling route set [4][5][7][8].

4.2 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.

4.3 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	Old	New
Jun 2004	S_24	SP-040262	--	--	Submitted to TSG SA#24 for Information	1.0.0	