ETSI TS 132 523 V9.0.0 (2010-07)

Technical Specification

Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
LTE;
Telecommunication management;
Self-Organizing Networks (SON);
Self-optimization;
Policy Network Resource Model (NRM) Integration Reference Point (IRP);
Common Object Request Broker Architecture (CORBA) Solution Set (SS)
(3GPP TS 32.523 version 9.0.0 Release 9)

Reference
DTS/TSGS-0532523v900

Keywords
GSM, LTE, UMTS

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Foreword

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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

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- x the first digit:
  - 1 presented to TSG for information;
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- 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:

32.521: Self-Organizing Networks (SON) Policy Network Resource Model (NRM) Integration Reference Point (IRP): Requirements

32.522: Self-Organizing Networks (SON) Policy Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)

32.523: Self-Organizing Networks (SON) Policy Network Resource Model (NRM) Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS)

32.525: Self-Organizing Networks (SON) Policy Network Resource Model (NRM) Integration Reference Point (IRP): Bulk CM eXtensible Markup Language (XML) file format definition.

1 Scope

The purpose of this SON Policy Network Resource Model IRP: CORBA Solution Set is to define the mapping of the IRP information model (see TS 32.522 [4]) to the protocol specific details necessary for implementation of this IRP in a CORBA/IDL environment.

This Solution Set is related to 3GPP TS 32.522 v9.0.X.

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 32.522: "Telecommunication management; Self-Organizing Networks (SON) Policy Network Resource Model (NRM) Integration Reference Point (IRP): Information Service (IS)".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 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 32.522 [4], TS 32.101 [2], TS 32.102 [3] and TR 21.905 [1] , in that order.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1], TS 32.522 [4] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TS 32.522 [4], TS 32.101 [2], TS 32.102 [3] and TR 21.905 [1], in that order.

CORBA	Common Object Request Broker Architecture
IS	Information Service
IDL	Interface Definition Language (OMG)
IOC	Information Object Class
IRP	Integration Reference Point
MO	Managed Object
MOC	Managed Object Class
NRM	Network Resource Model
OMG	Object Management Group
SS	Solution Set

4 Architectural Features

The overall architectural feature of Self Organizing Networks (SON) Policy Network Resource Model (NRM) IRP is specified in 3GPP TS 32.522 [4]. This clause specifies features that are specific to the CORBA SS.

5 Mapping

5.1 General mapping

Attributes modelling associations as defined in the NRM (here also called "reference attributes") are in this SS mapped to attributes. The names of the reference attributes in the NRM are mapped to the corresponding attribute names in the MOC. When the cardinality for an association is 0..1 or 1..1 the datatype for the reference attribute is defined as an MOReference. The value of an MO reference contains the distinguished name of the associated MO. When the cardinality for an association allows more than one referred MO, the reference attribute will be of type MOReferenceSet, which contains a sequence of MO references.

5.2 Information Object Class (IOC) mapping

5.2.1 IOC SONTargets

Attribute of IOC SONTargets in 3GPP TS 32.522 [4]	SS Attribute	SS Type	Support Qualifier	Read Qualifier	Write Qualifier
hoFailureRate	hoFailureRate	GenericSONPolicyNRMAttributeTypes:: HooTarget	O *)	M	M
hoFailureRatewithRrcStateTransition	hoFailureRatewithRrcStateTransition	GenericSONPolicyNRMAttributeTypes:: HooTarget	O *)	M	M
hoFailureRateWithoutRrcStateTransition	hoFailureRateWithoutRrcStateTransition	GenericSONPolicyNRMAttributeTypes:: HooTarget	O *)	M	M
rrcConnectionEstablishmentFailureRateCharacteristic	rrcConnectionEstablishmentFailureRateCharacteristic	GenericSONPolicyNRMAttributeTypes: CacTargetLink	O *)	M	M
rrcConnectionAbnormalReleaseRateCharacteristic	rrcConnectionAbnormalReleaseRateCharacteristic	GenericSONPolicyNRMAttributeTypes: CacTargetLink	O *)	M	M
eRabSetupFailureRateCharacteristic	eRabSetupFailureRateCharacteristic	GenericSONPolicyNRMAttributeTypes: CacTargetLink	O *)	M	M
eRabAbnormalReleaseRateCharacteristic	eRabAbnormalReleaseRateCharacteristic	GenericSONPolicyNRMAttributeTypes: CacTargetLink	O *)	M	M
*) Note: At least one of the attributes shall be supported.					

5.2.2 IOC SONControl

Attribute of IOC SONTargets in 3GPP TS 32.522 [4]	SS Attribute	SS Type	Support Qualifier	Read Qualifier	Write Qualifier
hooSwitch	hooSwitch	boolean	O *)	M	M
lboSwitch	lboSwitch	boolean	O *)	M	M
*) Note: At least one of the attributes shall be supported.					

Annex A (normative): CORBA IDL, NRM definitions

```
//File:SONPolicyNetworkResourcesNRMDefs.idl
#ifndef _SONPOLICYNETWORKRESOURCESNRMDEFS_IDL_
#define _SONPOLICYNETWORKRESOURCESNRMDEFS_IDL_
#include "GenericNetworkResourcesNRMDefs.idl"
#pragma prefix "3gppsa5.org"
/**
 * This module defines constants for each MO class name and
 * the attribute names for each defined MO class.
 */
module SONPolicyNetworkResourcesNRMDefs
{
    /*
     * Definitions for MO class SONTargets
     */
    interface SONTargets: GenericNetworkResourcesNRMDefs::Top
    {
       const string CLASS = "SONTargets";
       // Attribute Names
       //
       const string hoFailureRate = "hoFailureRate";
       const string hoFailureRateWithRrcStateTransition = "hoFailureRateWithRrcStateTransition";
       const string hoFailureRateWithoutRrcStateTransition =
"hoFailureRateWithoutRrcStateTransition";
       const string rrcConnectionEstablishmentFailureRateCharacteristic =
"rrcConnectionEstablishmentFailureRateCharacteristic";
       const string rrcConnectionAbnormalReleaseRateCharacteristic =
"rrcConnectionAbnormalReleaseRateCharacteristic";
       const string eRabSetupFailureRateCharacteristic = "eRabSetupFailureRateCharacteristic";
       const string eRabAbnormalReleaseRateCharacteristic = "eRabAbnormalReleaseRateCharacteristic";
    };

    /*
     * Definitions for MO class SONControl
     */
    interface SONControl: GenericNetworkResourcesNRMDefs::Top
    {
       const string CLASS = "SONControl";
       // Attribute Names
       //
       const string hooSwitch = "hooSwitch";
       const string lboSwitch = "lboSwitch";
    };

};


module GenericSONPolicyNRMAttributeTypes
{
    /*
     * Composite Availble Capacity (CAC)target type related to RRC/eRAB setup
     */
    struct CacTarget
    {
       unsigned short lower_end_of_cac_range;
       unsigned short upper_end_of_cac_range;
       unsigned short target_value;
       unsigned short target_priority;
     };
    typedef sequence<CacTarget> CacTargetList;

    struct CacTargetLink
    {
       CacTargetList uplink_cac_target;
       CacTargetList downlink_cac_target;
    };

    /*
     * HOO target type
     */
    struct HooTarget
    {
       unsigned short target_value;
```

```
       unsigned short target_priority;
    };
    typedef sequence<HooTarget> HooTargetList;

};
#endif // _SONPOLICYNETWORKRESOURCESNRMDEFS_IDL_
```

Annex B (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
05-2010	SA-48	SP-100285	--	--	Presentation to SA for information and approval	---	1.0.0
06-2010	SA-48	--	--	--	Publication	1.0.0	9.0.0

History

Document history		
V9.0.0	July 2010	Publication