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Technical Specification

**Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
Telecommunication management;
Configuration Management (CM);
Core network resources Integration Reference Point (IRP):
Common Object Request Broker Architecture (CORBA)
Solution Set (SS)
(3GPP TS 32.633 version 6.1.0 Release 6)**



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Foreword

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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:

- 32.631: "Configuration Management (CM); Core network resources Integration Reference Point (IRP): Requirements".
- 32.632: "Configuration Management (CM); Core network resources Integration Reference Point (IRP): Network Resource Model (NRM)".
- 32.633: "Configuration Management (CM); Core network resources Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS)".**
- 32.634: "Configuration Management (CM); Core network resources Integration Reference Point (IRP): Common Management Information Protocol (CMIP) Solution Set (SS)".
- 32.635: "Configuration Management (CM); Core network resources Integration Reference Point (IRP): Bulk CM 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.

1 Scope

The purpose of this *Core Network Resources IRP: CORBA Solution Set* is to define the mapping of the IRP information model (see TS 32.632 [3]) to the protocol specific details necessary for implementation of this IRP in a CORBA/IDL environment.

This Solution Set specification is related to 3GPP TS 32.632 V6.1.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 TS 32.101: "Telecommunication management; Principles and high level requirements".
- [2] 3GPP TS 32.102: "Telecommunication management; Architecture".
- [3] 3GPP TS 32.632: " Telecommunication management; Configuration Management (CM); Core Network Resources Integration Reference Point (IRP): Network Resource Model (NRM)".
- [4] 3GPP TS 32.300: " Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".
- [5] 3GPP TS 32.303: " Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS)".

3 Definitions and abbreviations

3.1 Definitions

For terms and definitions please refer to TS 32.101 [1], TS 32.102 [2] and TS 32.632 [3].

3.2 Abbreviations

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

CORBA	Common Object Request Broker Architecture
DN	Distinguished Name
IS	Information Service
IDL	Interface Definition Language (OMG)
IRP	Integration Reference Point
MGW	Media GateWay
MO	Managed Object
MOC	Managed Object Class
NRM	Network Resource Model
OMG	Object Management Group

4 Architectural features

The overall architectural feature of Core Network Resources IRP is specified in TS 32.632[3]. This clause specifies features that are specific to the CORBA SS [3].

4.1 Notifications

Notifications are sent according to the Notification IRP: CORBA SS (see TS 32.303 [5]).

5 Mapping

5.1 General mappings

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 Core Network NRM Managed Object Class (MOC) mapping

5.2.1 MOC MscServerFunction

Mapping from NRM MOC MscServerFunction attributes to SS equivalent MOC MscServerFunction attributes

NRM Attributes of MOC MscFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
mscServerFunctionId	mscServerFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M
mccList	mccList	long	Read-Write, M
mncList	mncList	long	Read-Write, M
lacList	lacList	long	Read-Write, M
sacList	sacList	long	Read-Write, M
gcaList	gcaList	long	Read-Write, M
mscId	mscId	long	Read-Write, M
Associated With/ mscServerFunction-GSMcell	mscServerFunction-GSMcell	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M
Associated With/ mscServerFunction-ExternalGSMcell	mscServerFunction-ExternalGSMcell	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M
Associated With/ mscServerFunction-CsMgwFunction	mscServerFunction-CsMgwFunction	GenericNRIRPSystem::AttributeTypes::MOReferenceSet	Read-Only, M

5.2.2 MOC HlrFunction

Mapping from NRM MOC HlrFunction attributes to SS equivalent MOC HlrFunction attributes

NRM Attributes of MOC HlrFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
hlrFunctionId	hlrFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M

5.2.3 MOC VlrFunction

Mapping from NRM MOC VlrFunction attributes to SS equivalent MOC VlrFunction attributes

NRM Attributes of MOC VlrFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
vlrFunctionId	vlrFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M

5.2.4 MOC AucFunction

Mapping from NRM MOC AucFunction attributes to SS equivalent MOC AucFunction attributes

NRM Attributes of MOC AucFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
aucFunctionId	aucFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M

5.2.5 MOC EirFunction

Mapping from NRM MOC EirFunction attributes to SS equivalent MOC EirFunction attributes

NRM Attributes of MOC EirFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
EirFunctionId	eirFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.6 MOC SmslwmscFunction

Mapping from NRM MOC SmslwmscFunction attributes to SS equivalent MOC SmslwmscFunction attributes

NRM Attributes of MOC SmslwmscFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
smslwmscFunctionId	smslwmscFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M

5.2.7 MOC SmsGmscFunction

Mapping from NRM MOC SmsGmscFunction attributes to SS equivalent MOC SmsGmscFunction attributes

NRM Attributes of MOC SmsGmscFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
SmsGmscFunctionId	smsGmscFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.8 MOC SgsnFunction

Mapping from NRM MOC SgsnFunction attributes to SS equivalent MOC SgsnFunction attributes

NRM Attributes of MOC SgsnFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
sgsnFunctionId	sgsnFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M
mccList	mccList	long	Read-Write, M
mncList	mncList	long	Read-Write, M
lacList	lacList	long	Read-Write, M
racList	racList	long	Read-Write, M
sacList	sacList	long	Read-Write, M
sgsnId	sgsnId	long	Read-Write, M
Associated With/ sgsnFunction-GSMCell	sgsnFunction-GSMCell	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M
Associated With/ sgsnFunction-ExternalGSMCell	sgsnFunction-ExternalGSMCell	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M
proceduralStatus	There is no corresponding SS attribute.		

5.2.9 MOC GgsnFunction

Mapping from NRM MOC GgsnFunction attributes to SS equivalent MOC GgsnFunction attributes

NRM Attributes of MOC GgsnFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
ggsnFunctionId	ggsnFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M
proceduralStatus	There is no corresponding SS attribute.		

5.2.10 MOC BgFunction

Mapping from NRM MOC BgFunction attributes to SS equivalent MOC BgFunction attributes

NRM Attributes of MOC BgFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
BgFunctionId	bgFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.11 MOC GmscFunction

Mapping from NRM MOC GmscFunction attributes to SS equivalent MOC GmscFunction attributes

NRM Attributes of MOC GmscFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
GmscFunctionId	gmscFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.12 MOC SmlcFunction

Mapping from NRM MOC SmlcFunction attributes to SS equivalent MOC SmlcFunction attributes

NRM Attributes of MOC SmlcFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
SmlcFunctionId	smlcFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.13 MOC GmlcFunction

Mapping from NRM MOC GmlcFunction attributes to SS equivalent MOC GmlcFunction attributes

NRM Attributes of MOC GmlcFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
GmlcFunctionId	gmlcFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.14 MOC ScfFunction

Mapping from NRM MOC ScfFunction attributes to SS equivalent MOC ScfFunction attributes

NRM Attributes of MOC ScfFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
ScfFunctionId	scfFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.15 MOC SrfFunction

Mapping from NRM MOC SrfFunction attributes to SS equivalent MOC SrfFunction attributes

NRM Attributes of MOC SrfFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
SrfFunctionId	srfFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.16 MOC CbcFunction

Mapping from NRM MOC CbcFunction attributes to SS equivalent MOC CbcFunction attributes

NRM Attributes of MOC CbcFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
CbcFunctionId	cbcFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.17 MOC CgfFunction

Mapping from NRM MOC CgfFunction attributes to SS equivalent MOC CgfFunction attributes

NRM Attributes of MOC CgfFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
CgfFunctionId	cgfFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.18 MOC ImsMgwFunction

Mapping from NRM MOC MgwFunction attributes to SS equivalent MOC MgwFunction attributes

NRM Attributes of MOC MgwFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
imsMgwFunctionId	imsMgwFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M

5.2.19 MOC GmscServerFunction

Mapping from NRM MOC GmscServerFunction attributes to SS equivalent MOC GmscServerFunction attributes

NRM Attributes of MOC GmscServerFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
GmscServerFunctionId	gmscServerFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.20 MOC IwfFunction

Mapping from NRM MOC IwfFunction attributes to SS equivalent MOC IwfFunction attributes

NRM Attributes of MOC IwfFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
IwfFunctionId	iwfFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.21 MOC MnpSrfFunction

Mapping from NRM MOC MnpSrfFunction attributes to SS equivalent MOC IwfFunction attributes

NRM Attributes of MOC MnpSrfFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
MnpSrfFunctionId	mnpSrfFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.22 MOC NpdbFunction

Mapping from NRM MOC NpdbFunction attributes to SS equivalent MOC NpdbFunction attributes

NRM Attributes of MOC NpdbFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
NpdbFunctionId	npdbFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.23 MOC SgwFunction

Mapping from NRM MOC SgwFunction attributes to SS equivalent MOC SgwFunction attributes

NRM Attributes of MOC SgwFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
sgwFunctionId	sgwFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.24 MOC SsfFunction

Mapping from NRM MOC SsfFunction attributes to SS equivalent MOC SsfFunction attributes

NRM Attributes of MOC SsfFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
SsfFunctionId	ssfFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read- Write, M

5.2.25 MOC BsFunction

Mapping from NRM MOC BsFunction attributes to SS equivalent MOC BsFunction attributes

NRM Attributes of MOC BsFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
bsFunctionId	bsFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M

5.2.26 MOC IucsLink

Mapping from NRM MOC IucsLink attributes to SS equivalent MOC IucsLink attributes

NRM Attributes of MOC IucsLink in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
iucsLinkId	iucsLinkId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M
Connected To/connectedRnc	connectedRnc	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M
Connected To/connectedBss	connectedBss	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M

5.2.27 MOC IupsLink

Mapping from NRM MOC IupsLink attributes to SS equivalent MOC IupsLink attributes

NRM Attributes of MOC IupsLink in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
iupsLinkId	iupsLinkId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M
Connected To/connectedRnc	connectedRnc	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, O
Connected To/connectedBss	connectedBss	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, O

5.2.28 MOC IubcLink

Mapping from NRM MOC IubcLink attributes to SS equivalent MOC IubcLink attributes

NRM Attributes of MOC IubcLink in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
iubcLinkId	iubcLinkId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M
Connected To/connectedRnc	connectedRnc	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M

5.2.29 MOC ALink

Mapping from NRM MOC ALink attributes to SS equivalent MOC ALink attributes

NRM Attributes of MOC IucsLink in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
aLinkId	aLinkId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M
Connected To/connectedBss	connectedBss	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M

5.2.30 MOC GbLink

Mapping from NRM MOC GbLink attributes to SS equivalent MOC GbLink attributes

NRM Attributes of MOC IucsLink in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
gbLinkId	gbLinkId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M
Connected To/connectedBss	connectedBss	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M

5.2.31 MOC CsMgwFunction

Mapping from NRM MOC CsMgwFunction attributes to SS equivalent MOC CsMgwFunction attributes

NRM Attributes of MOC MgwFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
csMgwFunctionId	csMgwFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M
Associated With/csMgwFunction- mscServerFunction	csMgwFunction- mscServerFunction	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M
Connected To/csMgwFunction- IucsLink	csMgwFunction- IucsLink	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M
Connected To /csMgwFunction- ALink	csMgwFunction- ALink	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M

5.2.32 MOC ScscfFunction

Mapping from NRM IOC ScscfFunction attributes to SS equivalent MOC ScscfFunction

NRM Attributes of MOC ScscfFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
scscfFunctionId	scscfFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M

5.2.33 MOC PscsfFunction

Mapping from NRM IOC PscsfFunction attributes to SS equivalent MOC PscsfFunction

NRM Attributes of MOC PscsfFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
pscscfFunctionId	pscscfFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M

5.2.34 MOC IcsfFunction

Mapping from NRM IOC IcsfFunction attributes to SS equivalent MOC IcsfFunction

NRM Attributes of MOC IcsfFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
icscffFunctionId	icscfFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M

5.2.35 MOC SlfFunction

Mapping from NRM IOC SlfFunction attributes to SS equivalent MOC SlfFunction

NRM Attributes of MOC SlfFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
slfFunctionId	slfFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M

5.2.36 MOC BgcFunction

Mapping from NRM IOC BgcFunction attributes to SS equivalent MOC BgcFunction

NRM Attributes of MOC BgcFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
bgcFunctionId	bgcFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M

5.2.37 MOC MrfcFunction

Mapping from NRM IOC BgcFunction attributes to SS equivalent MOC MrfcFunction

NRM Attributes of MOC MrfcFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
mrfcFunctionId	mrfcFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M

5.2.38 MOC MrfpFunction

Mapping from NRM IOC MrfpFunction attributes to SS equivalent MOC MrfpFunction

NRM Attributes of MOC MrfpFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
rfpFunctionId	mrfpFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M

5.2.39 MOC AsFunction

Mapping from NRM IOC AsFunction attributes to SS equivalent MOC AsFunction

NRM Attributes of MOC AsFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
asFunctionId	asFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M

5.2.40 MOC MgcFunction

Mapping from NRM IOC MgcFunction attributes to SS equivalent MOC MgcFunction

NRM Attributes of MOC MgcFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
mgcfFunctionId	mgcfFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M

6 Rules for NRM extensions

This clause discusses how the models and IDL definitions provided in the present document can be extended for a particular implementation and still remain compliant with 3GPP SA5's specifications.

6.1 Allowed extensions

Vendor-specific MOCs may be supported. The vendor-specific MOCs may support new types of attributes. The 3GPP SA5-specified notifications may be issued referring to the vendor-specific MOCs and vendor-specific attributes. New MOCs shall be distinguishable from 3GPP SA5 MOCs by name. 3GPP SA5-specified and vendor-specific attributes may be used in vendor-specific MOCs. Vendor-specific attribute names shall be distinguishable from existing attribute names.

NRM MOCs may be subclassed. Subclassed MOCs shall maintain the specified behaviour of the 3GPP SA5's superior classes. They may add vendor-specific behaviour with vendor-specific attributes. When subclassing, naming attributes cannot be changed. The subclassed MOC shall support all attributes of its superior class. Vendor-specific attributes cannot be added to 3GPP SA5 NRM MOCs without subclassing.

When subclassing, the 3GPP SA5-specified containment rules and their specified cardinality shall still be followed. As an example, ManagementNode (or its subclasses) shall be contained under SubNetwork (or its subclasses).

Managed Object Instances may be instantiated as CORBA objects. This requires that the MOCs be represented in IDL. 3GPP SA5's NRM MOCs are not currently specified in IDL, but may be specified in IDL for instantiation or subclassing purposes. However, management information models should not require that IRPManagers access the instantiated managed objects other than through supported methods in the present document.

Extension rules related to notifications (Notification categories, Event Types, Extended Event Types etc.) are for further study.

6.2 Extensions not allowed

The IDL specifications in the present document cannot be edited or altered. Any additional IDL specifications shall be specified in separate IDL files.

IDL interfaces (note: not MOCs) specified in the present document may not be subclassed or extended. New interfaces may be defined with vendor-specific methods.

Annex A (normative): CORBA IDL, NRM Definitions

A.1 IDL specification (file name "CoreNetworkResourcesNRMDefs.idl")

```
// File CoreNetworkResourcesNRMDefs.idl
#ifndef _CORENETWORKRESOURCESNRMDEFS_IDL_
#define _CORENETWORKRESOURCESNRMDEFS_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 CoreNetworkResourcesNRMDefs
{

    /**
     * Definitions for MO class MscServerFunction
     */
    interface MscServerFunction :
GenericNetworkResourcesNRMDefs::ManagedFunction
    {
        const string CLASS = "MscServerFunction";

        // Attribute Names
        //
        const string mscServerFunctionId = "mscServerFunctionId";
        const string mccList = "mccList";
        const string mncList = "mncList";
        const string lacList = "lacList";
        const string sacList = "sacList";
        const string gcaList = "gcaList";
        const string mscId = "mscId";
        const string mscServerFunctionGSMcell = "mscServerFunctionGSMcell";
        const string mscServerFunctionExternalGSMcell =
"mscServerFunctionExternalGSMcell";
        const string mscServerFunctionCsMgwFunction =
"mscServerFunctionCsMgwFunction";
    };

    /**
     * Definitions for MO class HlrFunction
     */
    interface HlrFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
    {
        const string CLASS = "HlrFunction";

        // Attribute Names
        //
        const string hlrFunctionId = "hlrFunctionId";
    };
};
```

```
/**
 * Definitions for MO class VlrFunction
 */
interface VlrFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "VlrFunction";

    // Attribute Names
    //
    const string vlrFunctionId = "vlrFunctionId";
};

/**
 * Definitions for MO class AucFunction
 */
interface AucFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "AucFunction";

    // Attribute Names
    //
    const string aucFunctionId = "aucFunctionId";
};

/**
 * Definitions for MO class EirFunction
 */
interface EirFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "EirFunction";

    // Attribute Names
    //
    const string eirFunctionId = "eirFunctionId";
};

/**
 * Definitions for MO class SmsIwmscFunction
 */
interface SmsIwmscFunction :
GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "SmsIwmscFunction";

    // Attribute Names
    //
    const string smsIwmscFunctionId = "smsIwmscFunctionId";
};

/**
 * Definitions for MO class SmsGmscFunction
 */
interface SmsGmscFunction :
GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "SmsGmscFunction";
};
```

```
// Attribute Names
//
const string smsGmscFunctionId = "smsGmscFunctionId";
};

/**
 * Definitions for MO class SgsnFunction
 */
interface SgsnFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "SgsnFunction";

    // Attribute Names
    //
    const string sgsnFunctionId = "sgsnFunctionId";
    const string mccList = "mccList";
    const string mncList = "mncList";
    const string lacList = "lacList";
    const string racList = "racList";
    const string sacList = "sacList";
    const string sgsnId = "sgsnId";
    const string sgsnFunctionGSMcell = "sgsnFunctionGSMcell";
    const string sgsnFunctionExternalGSMcell = "sgsnFunctionExternalGSMcell";
};

/**
 * Definitions for MO class GgsnFunction
 */
interface GgsnFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "GgsnFunction";

    // Attribute Names
    //
    const string ggsnFunctionId = "ggsnFunctionId";
};

/**
 * Definitions for MO class BgFunction
 */
interface BgFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "BgFunction";

    // Attribute Names
    //
    const string bgFunctionId = "bgFunctionId";
};

/**
 * Definitions for MO class GmscFunction
 */
interface GmscFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "GmscFunction";

    // Attribute Names
    //
```

```
    const string gmscFunctionId = "gmscFunctionId";
};

/**
 * Definitions for MO class SmlcFunction
 */
interface SmlcFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "SmlcFunction";

    // Attribute Names
    //
    const string smlcFunctionId = "smlcFunctionId";
};

/**
 * Definitions for MO class GmlcFunction
 */
interface GmlcFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "GmlcFunction";

    // Attribute Names
    //
    const string gmlcFunctionId = "gmlcFunctionId";
};

/**
 * Definitions for MO class ScfFunction
 */
interface ScfFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "ScfFunction";

    // Attribute Names
    //
    const string scfFunctionId = "scfFunctionId";
};

/**
 * Definitions for MO class SrfFunction
 */
interface SrfFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "SrfFunction";

    // Attribute Names
    //
    const string srfFunctionId = "srfFunctionId";
};

/**
 * Definitions for MO class CbcFunction
 */
interface CbcFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
```

```
    const string CLASS = "CbcFunction";

    // Attribute Names
    //
    const string cbcFunctionId = "cbcFunctionId";
};

/**
 * Definitions for MO class CgfFunction
 */
interface CgfFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "CgfFunction";

    // Attribute Names
    //
    const string cgfFunctionId = "cgfFunctionId";
};

/**
 * Definitions for MO class ImsMgwFunction
 */
interface ImsMgwFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "ImsMgwFunction";

    // Attribute Names
    //
    const string imsMgwFunctionId = "imsMgwFunctionId";
};

/**
 * Definitions for MO class GmscServerFunction
 */
interface GmscServerFunction :
GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "GmscServerFunction";

    // Attribute Names
    //
    const string gmscServerFunctionId = "gmscServerFunctionId";
};

/**
 * Definitions for MO class IwfFunction
 */
interface IwfFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "IwfFunction";

    // Attribute Names
    //
    const string iwfFunctionId = "iwfFunctionId";
};

/**
 * Definitions for MO class MnpSrfFunction
```

```
*/
interface MnpSrfFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "MnpSrfFunction";

    // Attribute Names
    //
    const string mnpSrfFunctionId = "mnpSrfFunctionId";
};

/**
 * Definitions for MO class NpdbFunction
 */
interface NpdbFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "NpdbFunction";

    // Attribute Names
    //
    const string npdbFunctionId = "npdbFunctionId";
};

/**
 * Definitions for MO class SgwFunction
 */
interface SgwFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "SgwFunction";

    // Attribute Names
    //
    const string sgwFunctionId = "sgwFunctionId";
};

/**
 * Definitions for MO class SsfFunction
 */
interface SsfFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "SsfFunction";

    // Attribute Names
    //
    const string ssfFunctionId = "ssfFunctionId";
};

/**
 * Definitions for MO class ScscfFunction
 */
interface ScscfFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "ScscfFunction";

    // Attribute Names
    //
    const string scscfFunctionId = "scscfFunctionId";
};
```

```
/**
 * Definitions for MO class PcscfFunction
 */
interface PcscfFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "PcscfFunction";
    // Attribute Names
    //
    const string pcscfFunctionId = "pcscfFunctionId";
};

/**
 * Definitions for MO class IcscfFunction
 */
interface IcscfFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "IcscfFunction";

    // Attribute Names
    //
    const string icscfFunctionId = "icscfFunctionId";
};

/**
 * Definitions for MO class SlfFunction
 */
interface SlfFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "SlfFunction";

    // Attribute Names
    //
    const string slfFunctionId = "slfFunctionId";
};

/**
 * Definitions for MO class BgcFunction
 */
interface BgcFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "BgcFunction";

    // Attribute Names
    //
    const string bgcFunctionId = "bgcFunctionId";
};

/**
 * Definitions for MO class MrfcFunction
 */
interface MrfcFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "MrfcFunction";

    // Attribute Names
    //
    const string mrfcFunctionId = "mrfcFunctionId";
};
```



```
/**
 * Definitions for MO class MrfpFunction
 */
interface MrfpFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "MrfpFunction";

    // Attribute Names
    //
    const string mrfpFunctionId = "mrfpFunctionId";
};

/**
 * Definitions for MO class AsFunction
 */
interface AsFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "AsFunction";

    // Attribute Names
    //
    const string asFunctionId = "asFunctionId";
};

/**
 * Definitions for MO class MgcFunction
 */
interface MgcFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "MgcFunction";

    // Attribute Names
    //
    const string mgcFunctionId = "mgcFunctionId";
};

/**
 * Definitions for MO class BsFunction
 */
interface BsFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "BsFunction";

    // Attribute Names
    //
    const string bsFunctionId = "bsFunctionId";
};

/**
 * Definitions for MO class IucsLink
 */
interface IucsLink : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "IucsLink";

    // Attribute Names
    //
```

```
    const string iucsLinkId = "iucsLinkId";
    const string connectedRnc = "connectedRnc";
    const string connectedBss = "connectedBss";
};

/**
 * Definitions for MO class IupsLink
 */
interface IupsLink : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "IupsLink";

    // Attribute Names
    //
    const string iupsLinkId = "iupsLinkId";
    const string connectedRnc = "connectedRnc";
    const string connectedBss = "connectedBss";
};

/**
 * Definitions for MO class IubcLink
 */
interface IubcLink : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "IubcLink";

    // Attribute Names
    //
    const string iubcLinkId = "iubcLinkId";
    const string connectedRnc = "connectedRnc";
};

/**
 * Definitions for MO class ALink
 */
interface ALink : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "ALink";

    // Attribute Names
    //
    const string aLinkId = "aLinkId";
    const string connectedBss = "connectedBss";
};

/**
 * Definitions for MO class GbLink
 */
interface GbLink : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "GbLink";

    // Attribute Names
    //
    const string gbLinkId = "gbLinkId";
    const string connectedBss = "connectedBss";
};
```

```
/**
 * Definitions for MO class CsMgwFunction
 */
interface CsMgwFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "CsMgwFunction";

    // Attribute Names
    //
    const string csMgwFunctionId = "csMgwFunctionId";
    const string csMgwFunctionMscServerFunction =
"csMgwFunctionMscServerFunction";
    const string csMgwFunctionIucsLink = "csMgwFunctionIucsLink";
    const string csMgwFunctionALink = "csMgwFunctionALink";
};

};

#endif // _CORENETWORKRESOURCESNRMDEFS_IDL_
```

Annex B (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Jun 2001	S_12	SP-010283	--	--	Approved at TSG SA #12 and placed under Change Control	2.0.0	4.0.0
Jun 2002	S_16	SP-020302	001	--	Align with Rel-4 Network Architecture (23.002) by changing Roaming Signalling Gateway (R-SGW) to Signalling Gateway (SGW)	4.0.0	4.1.0
Sep 2002	S_17	SP-020489	002	--	Upgrade to Rel-5 the CORBA SS for Core Network NRM (add Managed Object Classes (MOCs))	4.1.0	5.0.0
Dec 2002	S_18	SP-020747	003	--	Removal of faulty attribute uraList (alignment with Rel-5 32.632 Network Resource Model)	5.0.0	5.1.0
Sep 2004	S_25	SP-040567	004	--	Correction in Rules for NRM extensions - Align with 32.622 (Generic NRM IS)	5.1.0	5.2.0
Sep 2004	S_25	SP-040582	005	--	Correction of modelling of Media GateWay (MGW)	5.1.0	5.2.0
Sep 2004	S_25	SP-040581	006	--	Add Inheritance in CORBA IDL	5.2.0	6.0.0
Dec 2004	S_26	SP-040809	007	--	Add new IMS Entities	6.0.0	6.1.0
Dec 2004	S_26	SP-040809	008	--	Add restart notification to GSN objects using 'proceduralStatus' attribute - Align with IS in 32.632	6.0.0	6.1.0

History

Document history		
V6.1.0	December 2004	Publication