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Technical Specification

**3rd Generation Partnership Project;
Technical Specification Group Services and System Aspects;
Telecommunication management;
Configuration Management (CM);
Core network resources Integration Reference Point (IRP);
Solution Set (SS) definitions
(Release 11)**



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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:

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- x the first digit:
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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
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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)".
- 32.636: "Configuration Management (CM); Core network resources Integration Reference Point (IRP); Solution Set (SS) definitions".**

1 Scope

The purpose of the present document 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 specific solution set environment.

This Solution Set specification is related to 3GPP TS 32.632 V11.0.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 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] W3C REC-xml-names-19990114: "Namespaces in XML".
- [6] 3GPP TS 32.626: "Telecommunication management; Configuration Management (CM); Generic Network Resources Integration Reference Point (IRP): Solution Set (SS) definitions".
- [7] 3GPP TS 32.612: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP); Information Service (IS)".
- [8] 3GPP TS 32.616: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP); Solution Set (SS) definitions".
- [9] W3C REC-xml-20001006: "Extensible Markup Language (XML) 1.0 (Second Edition)".
- [10] W3C REC-xmlschema-0-20010502: "XML Schema Part 0: Primer".
- [11] W3C REC-xmlschema-1-20010502: "XML Schema Part 1: Structures".
- [12] W3C REC-xmlschema-2-20010502: "XML Schema Part 2: Datatypes".

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].

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

XML file: file containing an XML document

XML document: composed of the succession of an optional XML declaration followed by a root XML element

NOTE: See [9]; in the scope of the present document.

XML declaration: it specifies the version of XML being used

NOTE: See [9].

XML element: has a type, is identified by a name, may have a set of XML attribute specifications and is either composed of the succession of an XML start-tag followed by the XML content of the XML element followed by an XML end-tag, or composed simply of an XML empty-element tag; each XML element may contain other XML elements

NOTE: See [9].

empty XML element: having an empty XML content; an empty XML element still possibly has a set of XML attribute specifications; an empty XML element is either composed of the succession of an XML start-tag directly followed by an XML end-tag, or composed simply of an XML empty-element tag

NOTE: See [9].

XML content (of an XML element): empty if the XML element is simply composed of an XML empty-element tag; otherwise the part, possibly empty, of the XML element between its XML start-tag and its XML end-tag

XML start-tag: the beginning of a non-empty XML element is marked by an XML start-tag containing the name and the set of XML attribute specifications of the XML element

NOTE: See [9].

XML end-tag: the end of a non-empty XML element is marked by an XML end-tag containing the name of the XML element

NOTE: See [9].

XML empty-element tag: an empty XML element is composed simply of an empty-element tag containing the name and the set of XML attribute specifications of the XML element

NOTE: See [9].

XML attribute specification: has a name and a value

DTD: defines structure and content constraints to be respected by an XML document to be valid with regard to this DTD

NOTE: See [9].

XML schema: more powerful than a DTD, an XML schema defines structure and content constraints to be respected by an XML document to conform with this XML schema; through the use of XML namespaces several XML schemas can be used together by a single XML document; an XML schema is itself also an XML document that shall conform with the XML schema for XML schemas

NOTE: See [10], [11] and [12].

XML namespace: enables qualifying element and attribute names used in XML documents by associating them with namespaces identified by different XML schemas

NOTE: See [5], in the scope of the present document.

XML complex type: defined in an XML schema; cannot be directly used in an XML document; can be the concrete type or the derivation base type for an XML element type or for another XML complex type; ultimately defines constraints for an XML element on its XML attribute specifications and/or its XML content

NOTE: See [10], [11] and [12].

XML element type: declared by an XML schema; can be directly used in an XML document; as the concrete type of an XML element, directly or indirectly defines constraints on its XML attribute specifications and/or its XML content; can also be the concrete type or the derivation base type for another XML element type

NOTE: See [10], [11] and [12].

3.2 Abbreviations

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

CM	Configuration Management
CORBA	Common Object Request Broker Architecture
DN	Distinguished Name
DTD	Document Type Definition
EDGE	Enhanced Data for GSM Evolution
GERAN	GSM/EDGE Radio Access Network
GSM	Global System for Mobile communication
IDL	Interface Definition Language (OMG)
IOC	Information Object Class
IRP	Integration Reference Point
IS	Information Service
MGW	Media GateWay
MO	Managed Object
MOC	Managed Object Class
NRM	Network Resource Model
OMG	Object Management Group
UMTS	Universal Mobile Telecommunications System
UTRAN	Universal Terrestrial Radio Access Network
XML	eXtensible Markup Language

4 Solution Set definitions

This specifications defines the following 3GPP Core network resources IRP Solution Set Definitions:

- 3GPP Core network resources IRP CORBA SS (Annex A)
- 3GPP Core network resources IRP XML definitions (Annex B)

Annex A (normative): CORBA Solution Set

This annex contains the CORBA Solution Set for the IRP whose semantics is specified in Core Network Resources Integration Reference Point (IRP); Network Resource Model (NRM) (TS 32.632 [3]).

A.1 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.

A.1.1 Syntax for Distinguished Names

The syntax of a Distinguished Name is defined in 3GPP TS 32.300 [4].

A.1.2 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.

A.1.3 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.

A.2 Mapping

A.2.1 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 a 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.

A.2.2 Information Object Class (IOC) mapping

A.2.2.1 IOC MscServerFunction

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

Attributes of IOC MscServerFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
mscServerFunctionId	mscServerFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M
mccList	mccList	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Write, M
mndList	mndList	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Write, M
lacList	lacList	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Write, M
sacList	sacList	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Write, M
gcaList	gcaList	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Write, O
mscId	mscId	long	Read-Write, M
mscServerFunction-GsmCell	mscServerFunctionGsmCell	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet	Read-Only, M
mscServerFunction-ExternalGsmCell	mscServerFunctionExternalGsmCell	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet	Read-Only, M
mscServerFunction-CsMgwFunction	mscServerFunctionCsMgwFunction	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet	Read-Only, M
mscServerFunction-MscPool	mscServerFunctionMscPool	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet	Read-Only, O
nriList	nriList	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Only, M
defaultMsc	defaultMsc	short	Read-Only, O

A.2.2.2 IOC HlrFunction

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

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

A.2.2.3 IOC VlrFunction

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

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

A.2.2.4 IOC AucFunction

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

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

A.2.2.5 IOC EirFunction

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

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

A.2.2.6 IOC SmsIwmscFunction

Mapping from NRM IOC SmsIwmscFunction attributes to SS equivalent MOC SmsIwmscFunction attributes

Attributes of IOC SmsIwmscFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
smsIwmscFunctionId	smsIwmscFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M

A.2.2.7 IOC SmsGmscFunction

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

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

A.2.2.8 IOC SgsnFunction

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

Attributes of IOC 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	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Write, M
mndList	mndList	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Write, M
lacList	lacList	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Write, M
racList	racList	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Write, M
sacList	sacList	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Write, M
sgsnId	sgsnId	long	Read-Write, M
sgsnFunction-GsmCell	sgsnFunctionGsmCell	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet	Read-Only, M
sgsnFunction-ExternalGsmCell	sgsnFunctionExternalGsmCell	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet	Read-Only, M
proceduralStatus	There is no corresponding SS attribute.		
sgsnFunction-SgsnPool	sgsnFunctionSgsnPool	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet	Read-Only, M
nriList	nriList	GenericNetworkResourcesIRPSystem::AttributeTypes::LongSet	Read-Only, M

A.2.2.9 IOC GgsnFunction

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

Attributes of IOC 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.		

A.2.2.10 IOC BgFunction

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

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

A.2.2.11 IOC GmscFunction

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

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

A.2.2.12 IOC SmlcFunction

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

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

A.2.2.13 IOC GmlcFunction

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

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

A.2.2.14 IOC ScfFunction

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

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

A.2.2.15 IOC SrfFunction

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

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

A.2.2.16 IOC CbcFunction

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

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

A.2.2.17 IOC CgfFunction

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

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

A.2.2.18 IOC GmscServerFunction

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

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

A.2.2.19 IOC IwfFunction

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

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

A.2.2.20 IOC MnpSrfFunction

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

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

A.2.2.21 IOC NpdbFunction

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

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

A.2.2.22 IOC SgwFunction

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

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

A.2.2.23 IOC SsfFunction

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

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

A.2.2.24 IOC BsFunction

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

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

A.2.2.25 IOC IucsLink

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

Attributes of IOC IucsLink in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
IucsLinkId	IucsLinkId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M
connectedRnc	connectedRnc	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, O
connectedBss	connectedBss	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, O
connectedHNBGW	connectedHNBGW	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, O

A.2.2.26 IOC IupsLink

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

Attributes of IOC IupsLink in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
IupsLinkId	IupsLinkId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M
connectedRnc	connectedRnc	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, O
connectedBss	connectedBss	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, O
connectedHNBGW	connectedHNBGW	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, O

A.2.2.27 IOC IubcLink

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

Attributes of IOC IubcLink in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
IubcLinkId	IubcLinkId	string	Read-Only, M
userLabel	userLabel	string	Read- Write, M
connectedRnc	connectedRnc	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, M
connectedHNBGW	connectedHNBGW	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, O

A.2.2.28 IOC ALink

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

Attributes of IOC ALink in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
aLinkId	aLinkId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M
connectedBss	connectedBss	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, M

A.2.2.29 IOC GbLink

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

Attributes of IOC GbLink in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
gbLinkId	gbLinkId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M
connectedBss	connectedBss	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, M

A.2.2.30 IOC CsMgwFunction

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

Attributes of IOC CsMgwFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
csMgwFunctionId	csMgwFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-Write, M
csMgwFunction-MscServerFunction	csMgwFunctionMscServerFunction	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, M
csMgwFunction-MscServerFunction	csMgwFunction-MscServerFunction	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, M
csMgwFunction-lucsLink	csMgwFunctionlucsLink	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet	Read-Only, M
csMgwFunction-ALink	csMgwFunctionALink	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReferenceSet	Read-Only, M

A.2.2.31 IOC BmScFunction

Mapping from NRM IOC BmScFunction attributes to SS equivalent MOC BmScFunction attributes

Attributes of IOC BmScFunction in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
bmScFunctionId	bmScFunctionId	string	Read-Only, M

A.2.2.32 IOC Link_BmSc_Ggsn

All attributes are inherited from `Link`. See mapping of attributes for `Link` IOC in 3GPP TS 32.626 [6].

A.2.2.33 IOC Link_Ggsn_Sgsn

All attributes are inherited from `Link`. See mapping of attributes for `Link` IOC in 3GPP TS 32.626 [6].

A.2.2.34 CircuitEndPointSubgroup

Mapping from NRM IOC CircuitEndPointSubgroup attributes to SS equivalent MOC CircuitEndPointSubgroup attributes

Attributes of IOC CircuitEndPointSubgroup in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
circuitEndPointSubgroupId	circuitEndPointSubgroupId	String	Read-Only, M

A.2.2.35 IOC MscPool

Mapping from NRM IOC MscPool attributes to SS equivalent MOC MscPool attributes

Attributes of IOC MscPool in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
id	id	string	Read-Only, M
mscPool-MscServerFunction	mscPoolMscServerFunction	GenericNetworkResourcesIRP System::AttributeTypes::MOR eferenceSet	Read-Only, M

A.2.2.36 IOC MscPoolArea

Mapping from NRM IOC MscPoolArea attributes to SS equivalent MOC MscPoolArea attributes

Attributes of IOC MscPoolArea in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
id	id	string	Read-Only, M
lacList	lacList	GenericNetworkResourcesIRP System::AttributeTypes::Long Set	Read-Only, M
pLMNIdList	pLMNIdList	GenericNetworkResourcesIRP System::AttributeTypes::Long Set	Read-Only, O
mscPoolArea-MscPool	mscPoolAreaMscPool	GenericNetworkResourcesIRP System::AttributeTypes::MOR eferenceSet	Read-Only, M

A.2.2.37 IOC SgsnPool

Mapping from NRM IOC SgsnPool attributes to SS equivalent MOC SgsnPool attributes

Attributes of IOC SgsnPool in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
id	id	String	Read-Only, M
sgsnPool-SgsnFunction	sgsnPoolSgsnFunction	GenericNetworkResourcesIRP System::AttributeTypes::MOR eferenceSet	Read-Only, M

A.2.2.38 IOC SgsnPoolArea

Mapping from NRM IOC SgsnPoolArea attributes to SS equivalent MOC SgsnPoolArea attributes

Attributes of IOC SgsnPoolArea in TS 32.632 [3]	SS Attributes	SS Type	Qualifier
id	id	String	Read-Only, M
racList	racList	GenericNetworkResourcesIRP System::AttributeTypes::Long Set	Read-Only, M
pLMNIdList	pLMNIdList	GenericNetworkResourcesIRP System::AttributeTypes::Long Set	Read-Only, O
sgsnPoolArea-SgsnPool	sgsnPoolAreaSgsnPool	GenericNetworkResourcesIRP System::AttributeTypes::MOR eferenceSet	Read-Only, M

A.3 Solution Set definitions

A.3.1 IDL definition structure

Clause A.3.2 defines the MO classes for the Core Network Resources IRP.

A.3.2 IDL specification "CoreNetworkResourcesNRMDefs.idl"

```
// File: CoreNetworkResourcesNRMDefs.idl
#ifndef _CORENETWORKRESOURCESENRMDEFS_IDL_
#define _CORENETWORKRESOURCESENRMDEFS_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";
        const string mscServerFunctionMscPool = "mscServerFunctionMscPool";
        const string nriList = "nriList";
        const string defaultMsc = "defaultMsc";

    };
    /**
     * 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 : GenericNetworkResourceNRMDefs::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";
    const string sgsnFunctionSgsnPool = "sgsnFunctionSgsnPool";
    const string nriList = "nriList";
};
/**
 * 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 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 iwFunctionId = "iwFunctionId";
};
/**
 * 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 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";
    const string connectedHNBGW = "connectedHNBGW";
};
/**
 * 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";
const string connectedHNBGW = "connectedHNBGW";
};
/**
 * Definitions for MO class IubcLink
 */
interface IubcLink : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "IubcLink";
    // Attribute Names
    //
const string iubcLinkId = "iubcLinkId";
const string connectedRnc = "connectedRnc";
const string connectedHNBGW = "connectedHNBGW";
};
/**
 * 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";
};
/**
 * Definitions for MO class BmScFunction
 */
interface BmScFunction : GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "BmScFunction";
    //Attribute Names
    //
const string bmScFunctionId = "bmScFunctionId";
};
/**
 * Definitions for MO class Link_BmSc_Ggsn
 */
interface Link_BmSc_Ggsn : GenericNetworkResourcesNRMDefs::Link
{
    const string CLASS = "Link_BmSc_Ggsn";

    // All Attributes inherited from Link
};
/**
 * Definitions for MO class Link_Ggsn_Sgsn
 */

```

```

interface Link_Ggsn_Sgsn : GenericNetworkResourcesNRMDefs::Link
{
    const string CLASS = "Link_Ggsn_Sgsn";

    // All Attributes inherited from Link
};
/* Definitions for MO class CircuitEndPointSubgroup
*/

interface CircuitEndPointSubgroup: GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "CircuitEndPointSubgroup";
    //Attribute Names
    const string circuitEndPointSubgroupId = "circuitEndPointSubgroupId";
};

/**
 * Definitions for MO class MscPool
 */
interface MscPool: GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "MscPool";
    //Attribute Names
    const string id = "id";
    const string mscPoolMscServerFunction = "mscPoolMscServerFunction";
};

/**
 * Definitions for MO class MscPoolArea
 */
interface MscPoolArea: GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "MscPoolArea";
    //Attribute Names
    const string id = "id";
    const string lacList = "lacList";
    const string pLMNIdList = "pLMNIdList";
    const s

    /* Definitions for MO class SgsnPool
    */

interface SgsnPool: GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "SgsnPool";
    //Attribute Names
    const string id = "id";
    const string sgsnPoolSgsnFunction = "sgsnPoolSgsnFunction";
};
/* Definitions for MO class SgsnPoolArea
*/

/* Definitions for MO class SgsnPoolArea
*/

interface SgsnPoolArea: GenericNetworkResourcesNRMDefs::ManagedFunction
{
    const string CLASS = "SgsnPoolArea";
    //Attribute Names
    const string id = "id";
    const string racList = "racList";
    const string pLMNIdList = "pLMNIdList";
    const string sgsnPoolAreaSgsnPool = "sgsnPoolAreaSgsnPool";
};

};
#endif // _CORENETWORKRESOURCESNRMDEFS_IDL_

```

Annex B (normative): XML definitions

This annex contains the XML definitions for the Core Network Resource IRP as it applies to Itf-N, in accordance with Core Network Resource IRP NRM definitions [3].

B.1 Architectural features

The overall architectural feature of Core Network Resource IRP NRM is specified in 3GPP TS 32.632 [3]. This clause specifies features that are specific to the XML Schema definitions.

B.1.1 Syntax for Distinguished Names

The syntax of a Distinguished Name is defined in 3GPP TS 32.300 [4].

B.2 Mapping

Not present in the current version of this specification.

B.3 Solution Set definitions

B.3.1 XML definition structure

The overall description of the file format of configuration data XML files is provided by 3GPP TS 32.616 [8].

B.3.2 of the present document defines the NRM-specific XML schema `coreNrm.xsd` for the Core Network Resources IRP NRM defined in 3GPP TS 32.632 [1].

XML schema `coreNrm.xsd` explicitly declares NRM-specific XML element types for the related NRM.

The definition of those NRM-specific XML element types complies with the generic mapping rules defined in 3GPP TS 32.616 [8].

B.3.2 XML schema "coreNrm.xsd"

```
<?xml version="1.0" encoding="UTF-8"?>

<!--
  3GPP TS 32.636 Core Network Resources IRP
  Bulk CM Configuration data file NRM-specific XML schema
  coreNrm.xsd
-->

<schema
  targetNamespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.636#coreNrm"
  elementFormDefault="qualified"
  attributeFormDefault="unqualified"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xn="http://www.3gpp.org/ftp/specs/archive/32_series/32.626#genericNrm"
  xmlns:cn="http://www.3gpp.org/ftp/specs/archive/32_series/32.636#coreNrm"
>

  <import namespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.626#genericNrm"/>

  <!-- Core Network Resources IRP NRM class associated XML elements -->
```

```

<complexType name="longList">
  <sequence>
    <element name="em" type="long" minOccurs="0" maxOccurs="unbounded"/>
  </sequence>
</complexType>

<complexType name="PLMNIId">
  <sequence>
    <element name="mcc" type="short"/>
    <element name="mnc" type="short"/>
  </sequence>
</complexType>
<complexType name="PLMNIIdList">
  <sequence>
    <element name="pLMNIId" type="cn:PLMNIId" maxOccurs="6" />
  </sequence>
</complexType>

<element
  name="MscServerFunction"
  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="userLabel" type="string"/>
                <element name="mccList" type="cn:longList"/>
                <element name="mncList" type="cn:longList"/>
                <element name="lacList" type="cn:longList"/>
                <element name="sacList" type="cn:longList"/>
                <element name="gcaList" type="cn:longList" minOccurs="0"/>
                <element name="mscId" type="long"/>
                <element name="mscServerFunctionGsmCell" type="xn:dnList"/>
                <element name="mscServerFunctionExternalGsmCell" type="xn:dnList"/>
                <element name="mscServerFunctionCsMgwFunction" type="xn:dnList"/>
                <element name="nrIList" type="cn:longList"/>
                <element name="mscServerFunctionMscPool" type="xn:dnList" minOccurs="0"/>
                <element name="defaultMsc" type="cn:defaultMscType" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="cn:IucsLink"/>
            <element ref="cn:ALink"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element
  name="HlrFunction"
  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="userLabel" type="string"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

```

```

</element>

<element
  name="VlrFunction"
  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="userLabel" type="string"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element
  name="AucFunction"
  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="userLabel" type="string"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element
  name="EirFunction"
  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="userLabel"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element
  name="SmsIwmscFunction"
  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>

```

```

<complexType>
  <complexContent>
    <extension base="xn:NrmClass">
      <sequence>
        <element name="attributes" minOccurs="0">
          <complexType>
            <all>
              <element name="userLabel"/>
            </all>
          </complexType>
        </element>
        <choice minOccurs="0" maxOccurs="unbounded">
          <element ref="xn:VsDataContainer"/>
        </choice>
      </sequence>
    </extension>
  </complexContent>
</complexType>
</element>

<element
  name="SmsGmscFunction"
  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="userLabel"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element
  name="GmscFunction"
  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="userLabel" type="string"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element
  name="SgsnFunction"
  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>

```

```

    <all>
      <element name="userLabel" type="string"/>
      <element name="mccList" type="cn:longList"/>
      <element name="mncList" type="cn:longList"/>
      <element name="lacList" type="cn:longList"/>
      <element name="racList" type="cn:longList"/>
      <element name="sacList" type="cn:longList"/>
      <element name="sgsnId" type="long"/>
      <element name="sgsnFunctionGsmCell" type="xn:dnList"/>
      <element name="sgsnFunctionExternalGsmCell" type="xn:dnList"/>
      <element name="sgsnFunctionSgsnPool" type="xn:dn"/>
      <element name="nriList" type="cn:longList"/>
    </all>
  </complexType>
</element>
<choice minOccurs="0" maxOccurs="unbounded">
  <element ref="cn:GbLink"/>
  <element ref="cn:IupsLink"/>
  <element ref="xn:VsDataContainer"/>
</choice>
</sequence>
</extension>
</complexContent>
</complexType>
</element>

<element
  name="GgsnFunction"
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>
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  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
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                <element name="userLabel" type="string"/>
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    </complexContent>
  </complexType>
</element>

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        </sequence>
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  </complexType>
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</extension>
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                            <all>
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                                <element name="connectedRnc" type="xn:dn" minOccurs="0"/>
                                <element name="connectedBss" type="xn:dn" minOccurs="0"/>
                                <element name="connectedHNBGW" type="xn:dn" minOccurs="0"/>
                            </all>
                        </complexType>
                    </element>
                    <choice minOccurs="0" maxOccurs="unbounded">
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</element>

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                            <all>
                                <element name="userLabel" type="string"/>
                                <element name="connectedRnc" type="xn:dn"/>
                                <element name="connectedHNBGW" type="xn:dn" minOccurs="0"/>
                            </all>
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                    </element>
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</element>

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                                <element name="userLabel" type="string"/>
                                <element name="connectedBss" type="xn:dn"/>
                            </all>
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                    <choice minOccurs="0" maxOccurs="unbounded">
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                    </choice>
                </sequence>
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</element>

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            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
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>
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                <element name="userLabel" type="string"/>
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          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
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        </sequence>
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  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
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                <element name="userLabel" type="string"/>
              </all>
            </complexType>
          </element>
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            <element ref="xn:VsDataContainer"/>
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      </extension>
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<element
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substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
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        </element>
        <choice minOccurs="0" maxOccurs="unbounded">
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        </choice>
      </sequence>
    </extension>
  </complexContent>
</complexType>
</element>

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  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
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      <extension base="xn:NrmClass">
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                <element name="userLabel" type="string"/>
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          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
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          </choice>
        </sequence>
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>
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>
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                <element name="userLabel" type="string"/>
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            </complexType>
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>
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              <all>
                <element name="userLabel" type="string"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
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      </extension>
    </complexContent>
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>
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              <all>
                <element name="userLabel" type="string"/>
              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

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    </sequence>
</extension>
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          <choice minOccurs="0" maxOccurs="unbounded">
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</element>

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  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
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      <extension base="xn:NrmClass">
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                <element name="csMgwFunctionIucsLink" type="xn:dnList"/>
                <element name="csMgwFunctionALink" type="xn:dnList"/>
              </all>
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          <choice minOccurs="0" maxOccurs="unbounded">
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</element>

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  >
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              <complexType>
                <all>
                  <element name="userLabel" type="string"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
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            </choice>
          </sequence>
        </extension>
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    </complexType>
  </element>

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    </sequence>
  </extension>
</complexContent>
</complexType>
</element>

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                <element name="protocolName" type="string" minOccurs="0"/>
                <element name="protocolVersion" type="string" minOccurs="0"/>
                <element name="userLabel" type="string"/>
                <element name="zEnd" type="xn:dn"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
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          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

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                <element name="zEnd" type="xn:dn"/>
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          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
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      </extension>
    </complexContent>
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  substitutionGroup="xn:ManagedElementOptionallyContainedNrmClass"
>
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          </element>
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  </complexType>
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              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>
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    <complexContent>
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                <element name="pLMNIdList" type="cn:PLMNIdList" minOccurs="0"/>
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              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
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</element>
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  </restriction>
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            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer" />
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      </extension>
    </complexContent>
  </complexType>
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          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
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        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

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    </choice>  
  </sequence>  
  </extension>  
</complexContent>  
</complexType>  
</element>  
</schema>
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Annex C (informative): Change history

Change history								
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Cat	Old	New
05-2010	SA-48	SP-100274	--	--	Presentation to SA for information and approval	--	---	1.0.0
06-2010	SA-48	--	--	--	Publication	--	1.0.0	10.0.0
09-2010	SA-49	SP-100489	001	--	Add the missing attribute connectedHNBGW - Align with 32.632	F	10.0.0	10.1.0
09-2010	SA-49	SP-100489	002	--	Addition of MscPool informaiton object class	B	10.0.0	10.1.0
09-2010	SA-49	SP-100489	003	--	Addition of SgsnPool informaiton object class	B	10.0.0	10.1.0
12-2010	SA-50	SP-100833	004	1	Correcting XML schema of Core network resources – Align with 32.632 IS	F	10.1.0	10.2.0
03-2012	SA-55	SP-120055	005	--	Correct syntax errors in XML schema.	F	10.2.0	10.3.0
09-2012	SA-57	-	-	-	Automatic upgrade from previous Release version 10.3.0	-	10.3.0	11.0.0