ETSI TS 132 632 V5.0.0 (2002-09)

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): Network Resource Model (NRM) (3GPP TS 32.632 version 5.0.0 Release 5)

GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS

Reference
RTS/TSGS-0532632v500

Keywords
GSM, UMTS

ETSI

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Association à but non lucratif enregistrée à la
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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

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Introduction

Configuration Management (CM), in general, provides the operator with the ability to assure correct and effective operation of the 3G network as it evolves. CM actions have the objective to control and monitor the actual configuration on the Network Elements (NEs) and Network Resources (NRs), and they may be initiated by the operator or by functions in the Operations Systems (OSs) or NEs.

CM actions may be requested as part of an implementation programme (e.g. additions and deletions), as part of an optimisation programme (e.g. modifications), and to maintain the overall Quality of Service (QoS). The CM actions are initiated either as single actions on single NEs of the 3G network, or as part of a complex procedure involving actions on many resources/objects in one or several NEs.

1 Scope

The present document is part of an Integration Reference Point (IRP) named "Core Network Resources IRP", through which an 'IRPAgent' (typically an Element Manager or Network Element) can communicate Configuration Management information to one or several 'IRPManagers' (typically Network Managers) concerning CN resources. This version of the IRP is mainly intended for "passive management" of high-level network configuration and status information as required by a Network Manager. The "Core Network Resources IRP" comprises a set of specifications defining Requirements, a protocol neutral Network Resource Model (NRM) and corresponding Solution Set(s).

The present document specifies the protocol neutral Core Network Resources IRP: Network Resource Model. It reuses relevant parts of the generic NRM in [16], either by direct reuse or sub-classing, and in addition to that defines CN specific Managed Object Classes.

The Configuration Management (CM) area is very large. The intention is to split the specification of the related interfaces in several IRPs – as described in the Introduction clause above. An important aspect of such a split is that the Network Resource Models (NRMs) defined in different IRPs containing NRMs are consistent, and that NRMs supported by an IRPAgent implementation can be accessed as one coherent model through one IRP Information Service.

To summarize, the present document has the following main purpose: to define the applied CN specific Network Resource Model, based on the generic NRM in [16].

Finally, in order to access the information defined by this NRM, an IRP Information Service (IS) is needed, such as the Basic CM IRP: IS [17]. However, which Information Service that is applicable is outside the scope of this document.

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: "3G Telecom Management principles and high level requirements".

[2]   3GPP TS 32.102: "3G Telecom Management architecture".

[3]   3GPP TS 32.302: "Telecommunication Management; Configuration Management; Notification Integration Reference Point; Information Service Version 1".

[4] - [6]   Void

[7]   ITU-T Recommendation X.710 (1991): "Common Management Information Service Definition for CCITT Applications".

[8] - [10]   Void

[11]   3GPP TS 32.111-2: "Telecommunication Management; Fault Management; Part 2: Alarm Integration Reference Point; Information Service Version 1".

[12]   Void

[13]   3GPP TS 32.300: "Name Convention for Managed Objects".

[14]   3GPP TS 32.600: "3G Configuration Management: Concepts and requirements".

[15]   3GPP TS 23.002: "Network Architecture".

[16]   3GPP TS 32.622: "Generic Network Resources IRP: NRM".

[17]   3GPP TS 32.602: "Basic CM IRP: Information Service".

[18]   3GPP TS 23.060: "General Packet Radio Service (GPRS) Service description".

3   Definitions and abbreviations

3.1   Definitions

For the purposes of the present document, the following terms and definitions apply. For terms and definitions not found here, please refer to 3GPP TS 32.101 [1], 3GPP TS 32.102 [2] and 3GPP TS 32.600 [14].

Association: In general it is used to model relationships between Managed Objects. Associations can be implemented in several ways, such as:

> (1) name bindings,
>
> (2) reference attributes, and
>
> (3) association objects.

This IRP stipulates that containment associations shall be expressed through name bindings, but it does not stipulate the implementation for other types of associations as a general rule. These are specified as separate entities in the object models (UML diagrams). Currently (in R99) however, all (non-containment) associations are modelled by means of reference attributes of the participating MOs.

Managed Element (ME): An instance of the Managed Object Class ManagedElement defined in [16].

Managed Object (MO): In the context of the present document, a Managed Object (MO) is a software object that encapsulates the manageable characteristics and behaviour of a particular Network Resource. The MO is instance of a MO class defined in a MIM/NRM. An MO class has attributes that provide information used to characterize the objects that belong to the class (the term "attribute" is taken from TMN and corresponds to a "property" according to CIM). Furthermore, an MO class can have operations that represent the behaviour relevant for that class (the term "operation" is taken from TMN and corresponds to a "method" according to CIM). An MO class may support notifications that provide information about an event occurrence within a network resource.

Management Information Base (MIB): A MIB is an instance of an NRM and has some values on the defined attributes and associations specific for that instance. In the context of the present document, an MIB consists of:

> (1) a Name space (describing the MO containment hierarchy in the MIB through Distinguished Names),
>
> (2) a number of Managed Objects with their attributes and
>
> (3) a number of Associations between these MOs. Also note that TMN (ITU-T Recommendation X.710 [7]) defines a concept of a Management Information Tree (also known as a Naming Tree) that corresponds to the name space (containment hierarchy) portion of this MIB definition. Figure 1 depicts the relationships between a Name space and a number of participating MOs (the shown association is of a non-containment type)
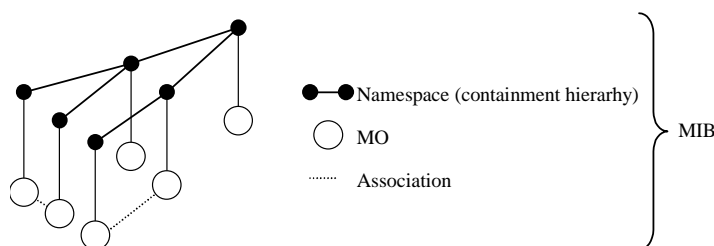

Figure 1: Relationships between a Name space and a number of participating MOs

Management Information Model (MIM): Also referred to as NRM – see the definition below.

Name space: A name space is a collection of names. The IRP name convention (see 3GPP TS 32.300 [13]) restricts the name space to a hierarchical containment structure, including its simplest form - the one-level, flat name space. All Managed Objects in a MIB shall be included in the corresponding name space and the MIB/name space shall only support a strict hierarchical containment structure (with one root object). A Managed Object that contains another is said to be the superior (parent); the contained Managed Object is referred to as the subordinate (child). The parent of all MOs in a single name space is called a Local Root. The ultimate parent of all MOs of all managed systems is called the Global Root.

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

Node B: A logical node responsible for radio transmission/reception in one or more cells to/from the User Equipment. It terminates the Iub interface towards the RNC.

3.2   Abbreviations

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

AUC	AUthentication Centre
BG	Border Gateway
BS	Billing System
CBC	Cell Broadcast Center
CGF	Charging Gateway Functionality
CMIP	Common Management Information Protocol
CMIS	Common Management Information Service
CN	Core Network
CORBA	Common Object Request Broker Architecture
DMTF	Distributed Management Task Force
DN	Distinguished Name (see 3GPP TS 32.300 [13])
EIR	Equipment Identity Register
EM	Element Manager
FM	Fault Management
FNR	Flexible Number Register
GDMO	Guidelines for the Definition of Managed Objects
GGSN	Gateway GPRS Support Node
GMLC	Gateway Mobile Location Center
GMSC	Gateway MSC
GMSC Server	Gateway MSC Server
GPRS	General Packet Radio System
HLR	Home Location Register
IDL	Interface Definition Language
IEC	International Electro-technical Commission
IETF	Internet Engineering Task Force
IRP	Integration Reference Point
ISO/IEC	International Standards Organization
ITU-T	International Telecommunication Union, Telecommunication Sector
IWF	Interworking Function
NM	Network Manager
NE	Network Element
ME	Managed Element
MGW	Media Gateway
MIB	Management Information Base
MIM	Management Information Model
MIT	Management Information Tree (or Naming Tree)
MNP-SRF	Mobile Number Portability/Signalling Relay Function
MO	Managed Object
MOC	Managed Object Class

MOI	Managed Object Instance
MSC	Mobile Services Switching Centre
MSC Server	Mobile Services Switching Centre Server
NE	Network Element
NPDB	Number Portability Database
NR	Network Resource
NRM	Network Resource Model
OSI	Open Systems Interconnection
PM	Performance Management
RDN	Relative Distinguished Name (see 3GPP TS 32.300 [13])
SGW	Signalling Gateway
SCF	Service Control Function
SGSN	Serving GPRS Support Node
SMLC	Serving Mobile Location Center
SMS	Short Message Service
SMS-GMSC	SMS Gateway MSC
SMS-IWMSC	SMS Interworking MSC
SNMP	Simple Network Management Protocol
SRF	Specialised Resource Function
SS	Solution Set
SSF	Service Switching Function
TMN	Telecommunications Management Network
UML	Unified Modelling Language
UMTS	Universal Mobile Telecommunications System
UTRAN	UMTS Terrestrial Radio Access Network
VLR	Visitor Location Register
WBEM	Web-Based Enterprise Management
XML	eXtensible Mark-up Language

4 System overview

4.1 System context

Figure and Figure identify system contexts of the subject IRP in terms of its implementation called IRPAgent and the user of the IRPAgent, called IRPManager. For a definition of IRPManager and IRPAgent, see 3GPP TS 32.102 [2].

The IRPAgent implements and supports the Basic CM IRP. The IRPAgent can be an Element Manager (EM) or a mediator that interfaces one or more NEs (see Figure), or it can be a Network Element (NE) (see Figure). In the former case, the interfaces (represented by a thick dotted line) between the EM and the NEs are not subject of this IRP.

An IRPManager using this IRP shall choose one of the two System Contexts defined here, for each NE. For instance, if an EM is responsible for managing a number of NEs, the NM shall access this IRP through the EM and not directly to those NEs. For another IRP though, the System Context may be different.
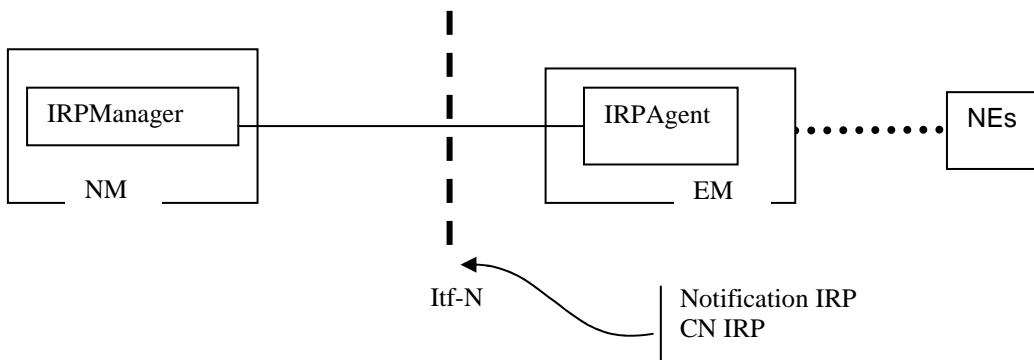
Figure 2: System Context A
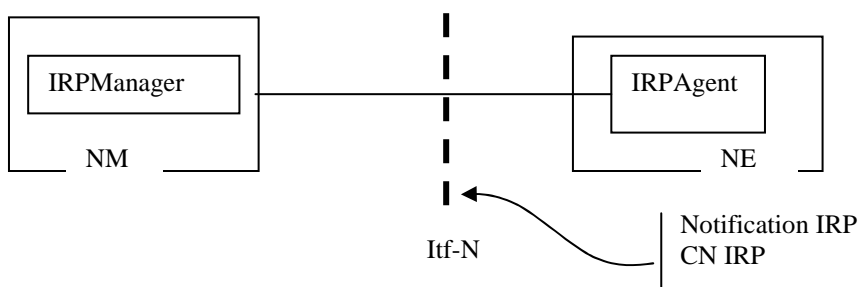
Figure 3: System Context B

4.2 Compliance rules

For general definitions of compliance rules related to qualifiers (Mandatory/Optional/Conditional) for *operations, notifications and parameters* (of operations and notifications) please refer to 3GPP TS 32.102 [2].

The following defines the meaning of Mandatory and Optional MOC attributes and associations between MOCs, in Solution Sets to the Basic CM IRP:

- The IRPManager shall support all mandatory attributes/associations. The IRPManager shall be prepared to receive information related to mandatory as well as optional attributes/associations without failure; however the IRPManager does not have to support handling of the optional attributes/associations.

- The IRPAgent shall support all mandatory attributes/associations. It may support optional attributes/associations.

An IRPAgent that incorporates vendor-specific extensions shall support normal communication with a 3GPP SA5-compliant IRPManager with respect to all Mandatory and Optional managed object classes, attributes, associations, operations, parameters and notifications without requiring the IRPManager to have any knowledge of the extensions.

Given that

- rules for vendor-specific extensions remain to be fully specified, and

- many scenarios under which IRPManager and IRPAgent interwork may exist,

it is recognised that in Release 4/5 the IRPManager, even though it is not required to have knowledge of vendor-specific extensions, may be required to be implemented with an awareness that extensions can exist and behave accordingly.

5 Modelling approach

The modelling approach is described in the Generic Network Resources IRP: NRM [16].

6 IRP Information Model

6.1 Introduction

As already introduced in the previous clause, the present clause defines the Core Network Resources IRP: Network Resource Model. That is, this model defines CN specific MOCs that shall be contained under the generic MOCs defined in [16].

The managed object classes in this NRM are protocol environment neutral and the model does not define the syntax or encoding of the operations and parameters.

It should be noted that this model allows for combined managed element functionality, where more than one 'function MOCs' (inherited from ManagedFunction) modelling more specific managed element functionality may be contained in the ManagedElement MOC.

The Information Service(s) to access managed objects of this NRM is defined elsewhere.

The corresponding Solution Set specifications provide protocol dependent definitions. They provide the actual realization of the operations and notifications defined in this subclause in each protocol environment. One may find that the class/attribute definitions in the protocol-neutral model differ from those defined in the Solution Sets (e.g. due to mappings to existing standard models that are applicable for a specific Solution Set).

6.2 Managed Object Class (MOC) diagrams

A general note regarding all the notification tables defined for each MOC below: Each MOC may potentially send the notifications listed in the notification table for the MOC. The notifications with qualifier (M) shall be supported by the MOC, and the notifications with qualifier (O) may be supported by the MOC.

For example: If Notification notifyObjectCreation defined in Basic CM IRP has the qualifier (M), then if a MOC is defined such that it emits such a notification, this notification shall be emitted when appropriate (i.e. when a new object is created). If Notification notifyChangedAlarm has the qualifier (O) in Alarm IRP (see 3GPP TS 32.111-2 [11]), then if a MOC is defined such that it emits such a notification, this notification may or may not be emitted when appropriate.

Further, if a notification in the qualifier column (of the MOC notification tables) has a reference to another specification, it means that the qualifier for the notification is specified in the referred specification.

6.2.1 Inheritance hierarchy

Figures 4 and 5 show the inheritance hierarchy for the CN NRM.
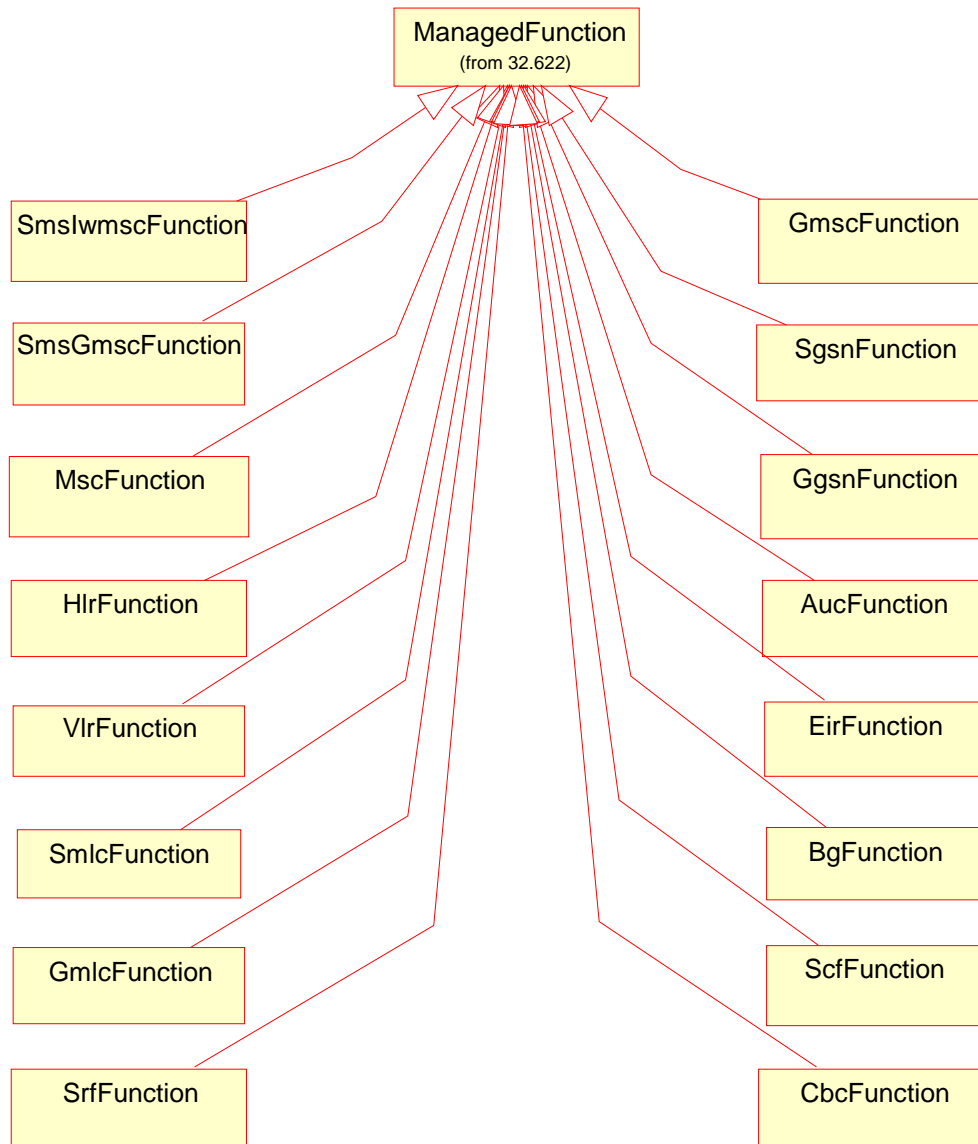
Figure 4: CN NRM Inheritance Hierarchy 1
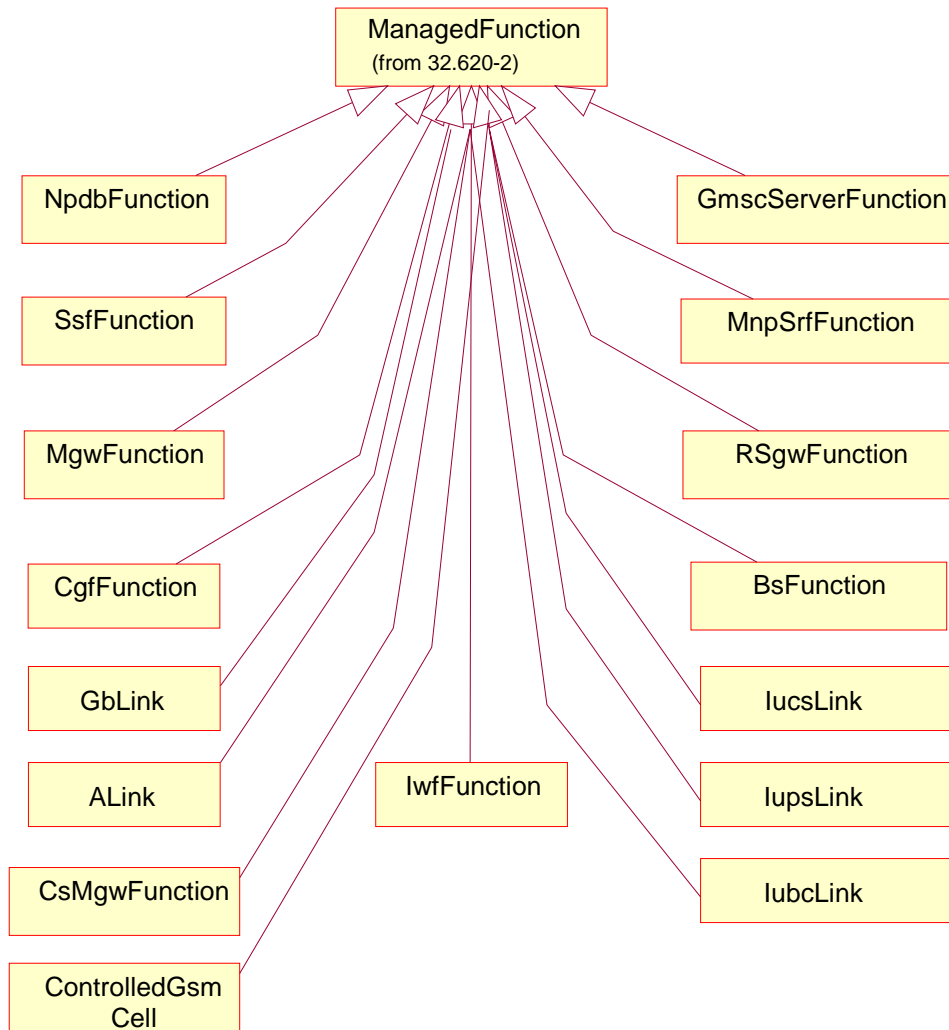
Figure 5: CN NRM Inheritance Hierarchy 2

6.2.2 Containment/Naming and Association diagrams

Figures 6, 7, 8, 9 and 10 show the containment/naming hierarchy and the associations of the CN NRM.

NOTE: The Managed Object containment/naming relationships are in the diagram(s) below indicated by UML "Aggregation by reference" ("hollow diamonds").
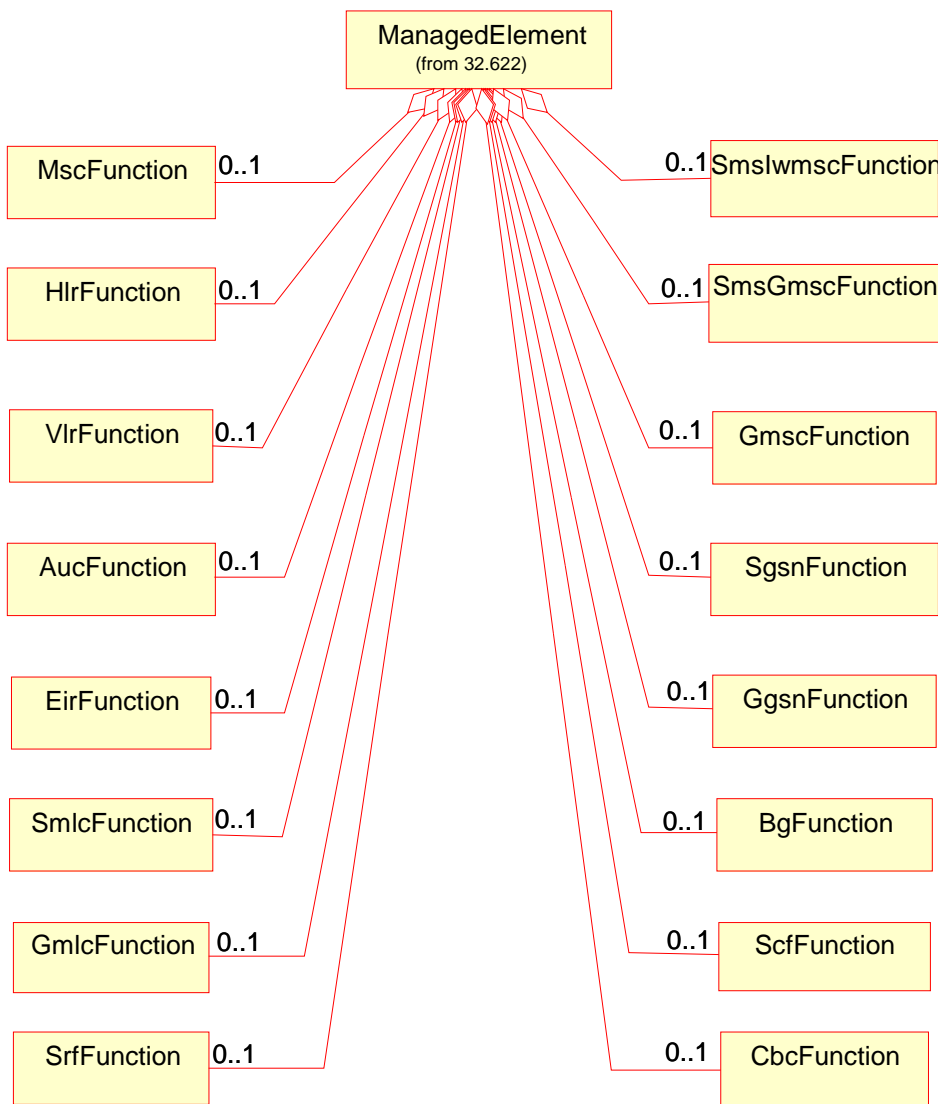
NOTE: The listed cardinality numbers represent transient as well as steady-state numbers, and reflect all managed object creation and deletion scenarios.

Figure 6: CN NRM Containment/Naming and Association diagram 1
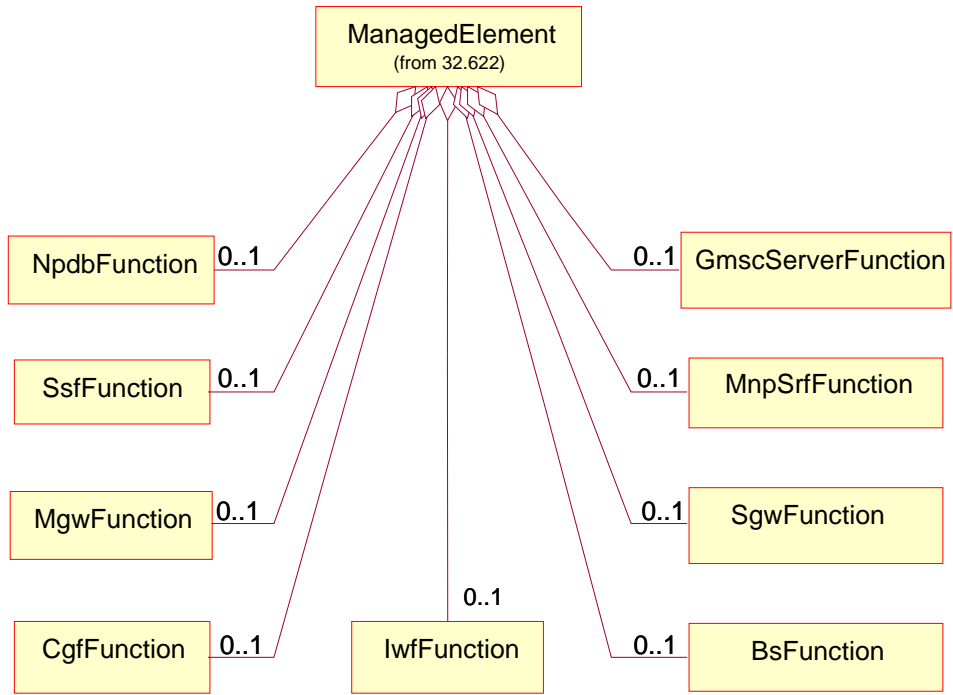
Figure 7: CN NRM Containment/Naming and Association diagram 2
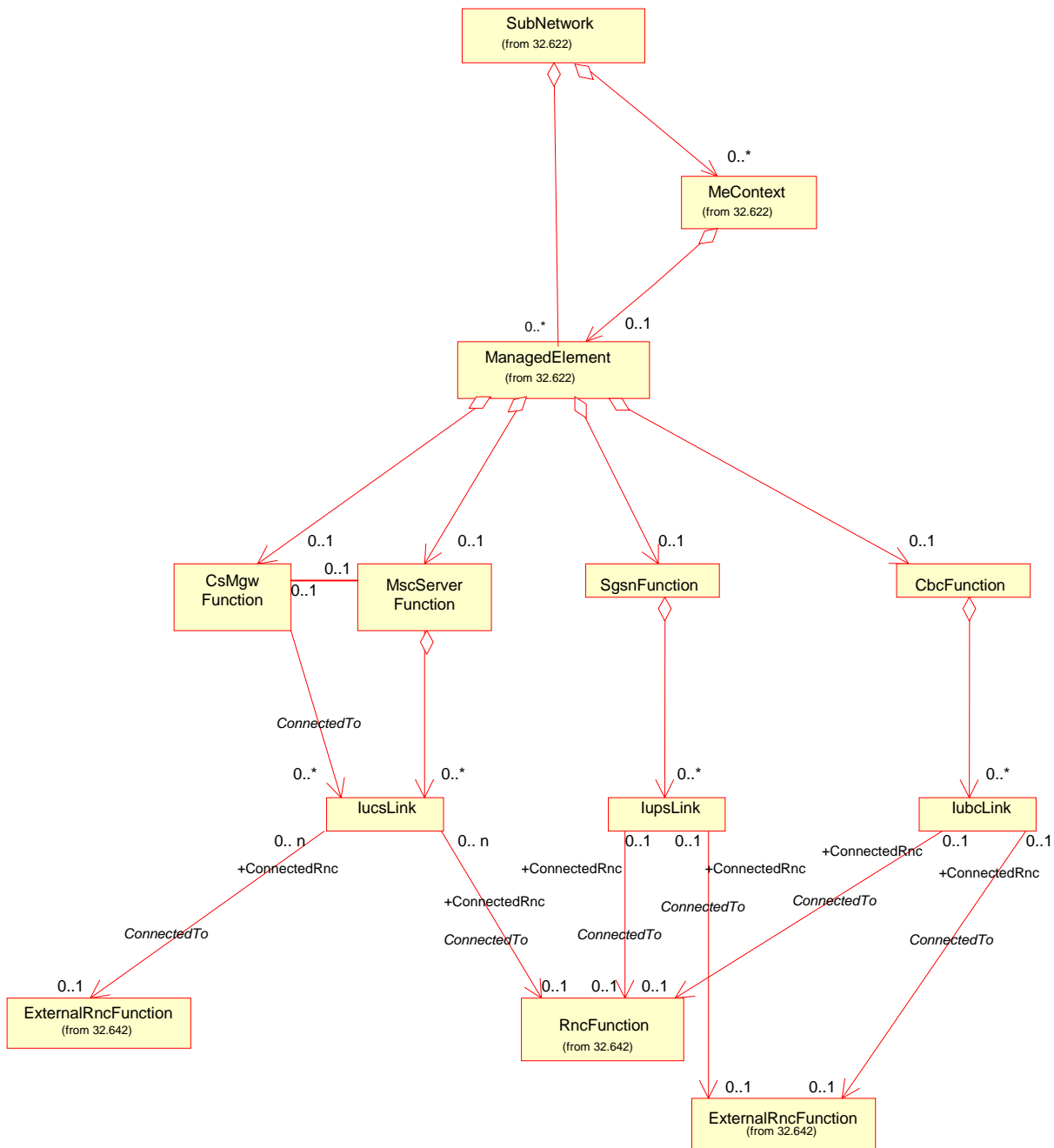
Figure 8: CN-UTRAN NRM Containment/Naming and Association diagram 3
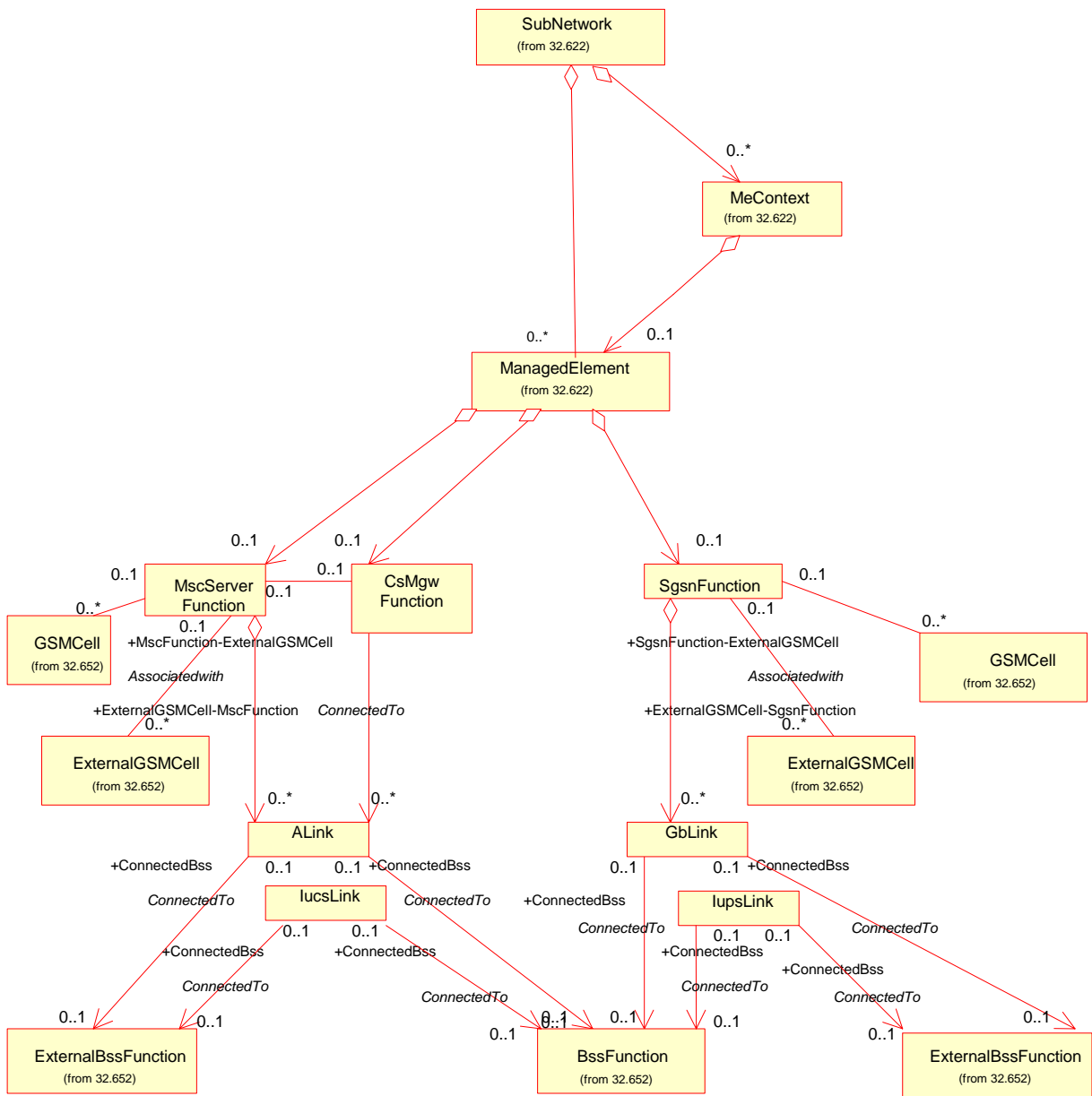
NOTE 1:   The association between MscServer and GsmCell, and SgsnFunction and GsmCell is optional. It may be valid if both the MscServer and GsmCell, or SgsnFunction and GsmCell are managed by the same management node.

NOTE 2:   The association between MscServer and CsMgwFunction is optional and is only mandatory when they belong to different ManagedElements.

Figure 9: CN-GERAN NRM Containment/Naming and Association diagram 4

Each Managed Object is identified with a Distinguished Name (DN) according to 3GPP TS 32.300 [13] that expresses its containment hierarchy. As an example, the DN of a Managed Object representing a cell could have a format like:

SubNetwork=Sweden,MeContext=MEC-Gbg-1,ManagedElement=MSC-Gbg-1,MscServerFunction=MSC-1.
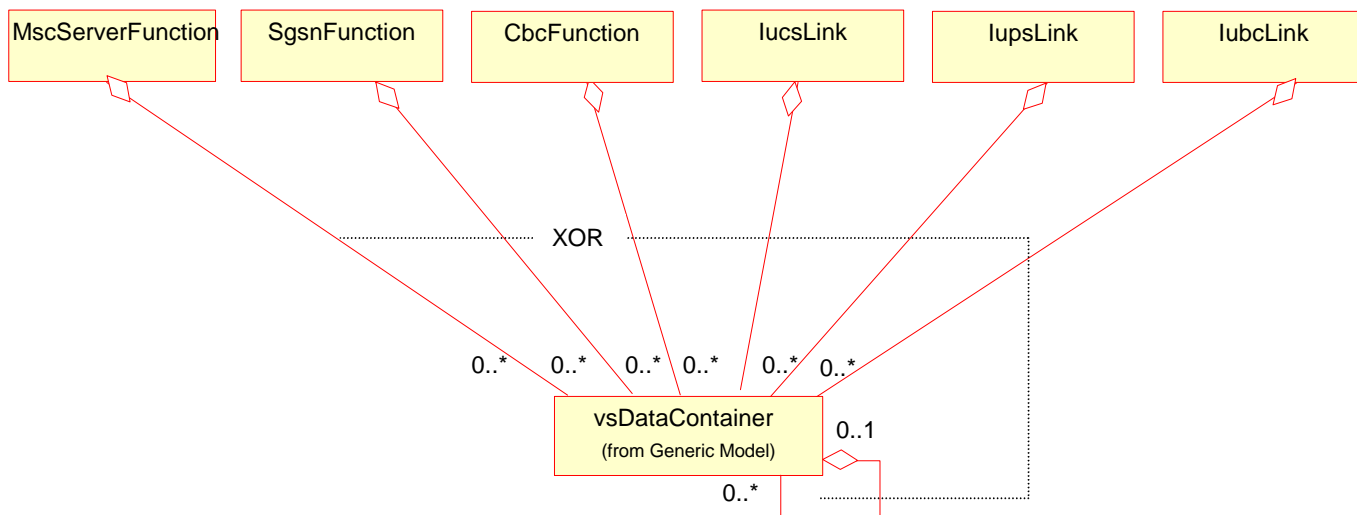
NOTE 1: The listed cardinality numbers represent transient as well as steady-state numbers, and reflect all managed object creation and deletion scenarios.

NOTE 2: Each instance of the vsDataContainer shall only be contained under one MOC. The vsDataContainer can be contained under MOCs defined in other NRMs.

Figure 10: vsDataContainer Containment/Naming and Association in CN NRM

The vsDataContainer is only used for the Bulk CM IRP.

6.3 Managed Object Class (MOC) definitions

6.3.1 MOC `MscServerFunction`

This Managed Object Class represents MSCserver functionality. For more information about the MSC, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 1: Attributes of `MscServerFunction`

Name	Qualifier	Description
mscServerFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.
mccList	READ-WRITE,M	List of Mobile Country Codes, MCC. It is a part of the PLMN Id (Ref. 3 GPP TS 23.003 [3]).
mncList	READ-WRITE,M	List of Mobile Network Codes, MNC. It is a part of the PLMN Id (Ref. 3 GPP TS 23.003 [3]).
lacList	READ-WRITE,M	List of Location Area Codes covered by MSC (Ref. 3 GPP TS 23.003 [3]).
sacList	READ-WRITE,M	List of Service Area Codes covered by MSC (Ref. 3 GPP TS 23.003 [3]).
uraList	READ-WRITE,M	List of UTRAN Registration Areas covered by MSC (Ref. 3 GPP TS 23.003 [3]).
gcaList	READ-WRITE,O	List of Group Call Area (Ref. 3 GPP TS 23.003 [3]).
mscId	READ-WRITE,M	Unique MSC ID (Ref. 3 GPP TS 23.002).
mscServerFunction-GSMcell	READ-ONLY,M	The value of this attribute shall be the DN of the related GSMcell instance. This is a reference attribute modelling the role (of the association AssociatedWith) that this MscServerFunction is associated with to 0-* GSMcell.
mscServerFunction-ExternalGSMcell	READ-ONLY,M	The value of this attribute shall be the DN of the related ExternalGSMcell instance. This is a reference attribute modelling the role (of the association AssociatedWith) that this MscServerFunction is associated with to 0-* ExternalGSMcell.
mscServerFunction-CsMgwFunction	READ- ONLY,M	The value of this attribute shall be the DN of the related CsMgwFunction instance. This is a reference attribute modelling the role (of the association AssociatedWith) that this MscServerFunction is associated with to 0-* CsMgwFunction.

Table 2: Notifications of `MscServerFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.2   MOC `HlrFunction`

This Managed Object Class represents HLR functionality. For more information about the HLR, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 3: Attributes of `HlrFunction`

Name	Qualifier	Description
hlrFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 4: Notifications of HlrFunction

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.3   MOC VlrFunction

This Managed Object Class represents VLR functionality. For more information about the VLR, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 5: Attributes of VlrFunction

Name	Qualifier	Description
vlrFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 6: Notifications of VlrFunction

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.4   MOC AucFunction

This Managed Object Class represents AUC functionality. For more information about the AUC, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 7: Attributes of AucFunction

Name	Qualifier	Description
aucFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 8: Notifications of `AucFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.5 MOC `EirFunction`

This Managed Object Class represents EIR functionality. For more information about the EIR, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 9: Attributes of `EirFunction`

Name	Qualifier	Description
eirFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 10: Notifications of `EirFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.6 MOC SmsIwmscFunction

This Managed Object Class represents SMS-IWMSC functionality. For more information about the SMS-IWMSC, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 11: Attributes of `SmsIwmscFunction`

Name	Qualifier	Description
SmsIwmscFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 12: Notifications of `SmsIwmscFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.7   MOC SmsGmscFunction

This Managed Object Class represents SMS-GMSC functionality. For more information about the SMS-GMSC, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 13: Attributes of `SmsGmscFunction`

Name	Qualifier	Description
SmsGmscFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 14: Notifications of `SmsGmscFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.8   MOC GmscFunction

This Managed Object Class represents GMSC functionality. For more information about the GMSC, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 15: Attributes of `GmscFunction`

Name	Qualifier	Description
gmscFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 16: Notifications of `GmscFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.9　MOC SgsnFunction

This managed object class represents SGSN functionality. For more information about the SGSN, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 17: Attributes of `SgsnFunction`

Name	Qualifier	Description
sgsnFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.
mccList	READ-WRITE,M	List of Mobile Country Codes, MCC. It is a part of the PLMN Id (Ref. 3 GPP TS 23.003 [3]).
mncList	READ-WRITE,M	List of Mobile Network Codes, MNC. It is a part of the PLMN Id (Ref. 3 GPP TS 23.003 [3]).
lacList	READ-WRITE,M	List of Location Area Codes covered by SGSN (Ref. 3 GPP TS 23.003 [3]).
racList	READ-WRITE,M	List of Routing Area Codes covered by SGSN (Ref. 3 GPP TS 23.003 [3]).
sacList	READ-WRITE,M	List of Service Area Codes covered by SGSN (Ref. 3 GPP TS 23.003 [3]).
sgsnId	READ-WRITE,M	Unique SGSN ID (Ref. 3GPP TS 23.002).
sgsnFunction-GSMCell	READ-ONLY,M	The value of this attribute shall be the DN of the related GSMcell instance. This is a reference attribute modelling the role (of the association AssociatedWith) that this SgsnFunction is associated with to 0-* GSMcell.
sgsnFunction-ExternalGSMCell	READ-ONLY,M	The value of this attribute shall be the DN of the related ExternalGSMcell instance. This is a reference attribute modelling the role (of the association AssociatedWith) that this SgsnFunction is associated with to 0-* ExternalGSMcell.

Table 18: Notifications of `SgsnFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.10　MOC `GgsnFunction`

This Managed Object Class represents GGSN functionality. For more information about the GGSN, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 19: Attributes of `GgsnFunction`

Name	Qualifier	Description
ggsnFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 20: Notifications of `GgsnFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.11 MOC `BgFunction`

This Managed Object Class represents BG functionality. For more information about the BG, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 21: Attributes of `BgFunction`

Name	Qualifier	Description
bgFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 22: Notifications of `BgFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.12 MOC `SmlcFunction`

This Managed Object Class represents SMLC functionality. For more information about the SMLC, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 23: Attributes of `SmlcFunction`

Name	Qualifier	Description
smlcFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 24: Notifications of `SmlcFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.13 MOC `GmlcFunction`

This Managed Object Class represents GMLC functionality. For more information about the GMLC, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 25: Attributes of `GmlcFunction`

Name	Qualifier	Description
gmlcFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 26: Notifications of `GmlcFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.14 MOC `ScfFunction`

This Managed Object Class represents SCF functionality (also referred to as gsmSCF). For more information about the SCF, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 27: Attributes of `ScfFunction`

Name	Qualifier	Description
scfFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 28: Notifications of `ScfFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.15   MOC `SrfFunction`

This Managed Object Class represents SRF functionality (also referred to as gsmSRF). For more information about the SRF, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 29: Attributes of `SrfFunction`

Name	Qualifier	Description
srfFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 30: Notifications of `SrfFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.16   MOC `CbcFunction`

This Managed Object Class represents CBC functionality. For more information about the CBC, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 31: Attributes of `CbcFunction`

Name	Qualifier	Description
cbcFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 32: Notifications of `CbcFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.17 MOC `CgfFunction`

This Managed Object Class represents CGF functionality. For more information about the CGF, see 3GPP TS 23.060 [18].

It inherits from ManagedFunction.

Table 33: Attributes of `CgfFunction`

Name	Qualifier	Description
cgfFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 34: Notifications of `CgfFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.18 MOC `MgwFunction`

This Managed Object Class represents IM-MGW functionality. For more information about MGW, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 35: Attributes of `MgwFunction`

Name	Qualifier	Description
mgwFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 36: Notifications of `MgwFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.19 MOC GmscServerFunction

This Managed Object Class represents GMSCServer functionality. For more information about GMSCServer, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 37: Attributes of `GmscServerFunction`

Name	Qualifier	Description
gmscServerFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 38: Notifications of `GmscServerFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.20 MOC IwfFunction

This Managed Object Class represents IWF functionality. For more information about IWF, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

<div align="center">Table 39: Attributes of <code>IwfFunction</code></div>

Name	Qualifier	Description
`iwfFunctionId`	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
`userLabel`	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

<div align="center">Table 40: Notifications of <code>IwfFunction</code></div>

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.21   MOC MnpSrfFunction

This Managed Object Class represents MNP-SRF functionality (also known as FNR). For more information about MNP-SRF, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

<div align="center">Table 41: Attributes of <code>MnpSrfFunction</code></div>

Name	Qualifier	Description
`mnpSrfFunctionId`	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
`userLabel`	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

<div align="center">Table 42: Notifications of <code>MnpSrfFunction</code></div>

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.22   MOC `NpdbFunction`

This Managed Object Class represents NPDB functionality. For more information about NPDB, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 43: Attributes of `NpdbFunction`

Name	Qualifier	Description
npdbFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 44: Notifications of `NpdbFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.23 MOC `SgwFunction`

This Managed Object Class represents SGW functionality. For more information about SGW, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 45: Attributes of `SgwFunction`

Name	Qualifier	Description
sgwFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 46: Notifications of `SgwFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.24 MOC `SsfFunction`

This Managed Object Class represents SSF functionality. For more information about SSF, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 47: Attributes of `SsfFunction`

Name	Qualifier	Description
ssfFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 48: Notifications of `SsfFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.25 MOC `BsFunction`

This Managed Object Class represents BS functionality. For more information about BS, see 3GPP TS 23.060 [18].

It inherits from ManagedFunction.

Table 49: Attributes of `BsFunction`

Name	Qualifier	Description
bsFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ- WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 50: Notifications of `BsFunction`

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.26 MOC `IucsLink`

This Managed Object Class represents a Iu-cs interface link connecting a MSCserver to the RNC or BSC. For more information about the Iu interface, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 51: Attributes of IucsLink

Name	Qualifier	Description
iucslinkId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ-WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.
connectedRnc	READ-ONLY, M	The value of this attribute shall be the DN of the related RncFunction or ExternalRncFunction instance. This is a reference attribute modelling the role (of the association ConnectedTo) that this IucsLink is connected to 0-1 RncFunction or 0-1 ExternalRncFunction.
connectedBss	READ-ONLY, M	The value of this attribute shall be the DN of the related BssFunction or ExternalBssFunction instance. This is a reference attribute modelling the role (of the association ConnectedTo) that this IucsLink is connected to 0-1 BssFunction or 0-1 ExternalBssFunction.

Table 52: Notifications of IucsLink

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.27 MOC IupsLink

This Managed Object Class represents a Iu-ps interface link connecting a SGSN to the RNC or BSC. For more information about the Iu interface, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 53: Attributes of IupsLink

Name	Qualifier	Description
iupslinkId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ-WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.
connectedRnc	READ-ONLY, O	The value of this attribute shall be the DN of the related RncFunction or ExternalRncFunction instance. This is a reference attribute modelling the role (of the association ConnectedTo) that this IupsLink is connected to 0-1 RncFunction or 0-1 ExternalRncFunction. This attribute shall be present if IupsLink is connected to an RNC.
connectedBss	READ-ONLY, O	The value of this attribute shall be the DN of the related BssFunction or ExternalBssFunction instance. This is a reference attribute modelling the role (of the association ConnectedTo) that this IupsLink is connected to 0-1 BssFunction or 0-1 ExternalBssFunction. This attribute shall be present if IupsLink is connected to a BSS.

NOTE: An instance of an IupsLink can only be connected to an RNC or a BSS.

Table 54: Notifications of IupsLink

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.28   MOC IubcLink

This Managed Object Class represents a Iu-bc interface link connecting a CBC to the RNC. For more information about the Iu interface, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 55: Attributes of IubcLink

Name	Qualifier	Description
iubclinkId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ-WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.
connectedRnc	READ-ONLY, M	The value of this attribute shall be the DN of the related RncFunction or ExternalRncFunction instance. This is a reference attribute modelling the role (of the association ConnectedTo) that this IubcLink is connected to 0-1 RncFunction or 0-1 ExternalRncFunction.

Table 56: Notifications of IubcLink

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.29   MOC ALink

This Managed Object Class represents the A interface link connecting a MSC to the GERAN. For more information about the GERAN, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 57: Attributes of ALink

Name	Qualifier	Description
aLinkId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ-WRITE,M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.
connectedBss	READ-ONLY, M	The value of this attribute shall be the DN of the related BssFunction or ExternalBssFunction instance. This is a reference attribute modelling the role (of the association ConnectedTo) that this aLink is connected to 0-1 BssFunction or 0-1 ExternalBssFunction.

Table 58: Notifications of ALink

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.30   MOC GbLink

This Managed Object Class represents the Gb interface link connecting a SGSN to the GERAN. For more information about the GERAN, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 59: Attributes of GbLink

Name	Qualifier	Description
gbLinkId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ-WRITE,M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.
connectedBss	READ-ONLY, M	The value of this attribute shall be the DN of the related BssFunction or ExternalBssFunction instance. This is a reference attribute modelling the role (of the association ConnectedTo) that this gbLink is connected to 0-1 BssFunction or 0-1 ExternalBssFunction.

Table 60: Notifications of GbLink

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.3.32   MOC CsMgwFunction

This Managed Object Class represents CS-MGW functionality. For more information about MGW, see 3GPP TS 23.002 [15].

It inherits from ManagedFunction.

Table 63: Attributes of CsMgwFunction

Name	Qualifier	Description
csmgwFunctionId	READ-ONLY, M	An attribute whose 'name+value' can be used as an RDN when naming an instance of this object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.
userLabel	READ-WRITE, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.
csMgwFunction-MscServerFunction	READ-ONLY, M	The value of this attribute shall be the DN of the related mscServerFunction instance. This is a reference attribute modelling the role (of the association AssociatedWith) that this csMgwFunction is associated with to 0-* mscServerFunction.
csMgwFunction-IucsLink	READ-ONLY, M	The value of this attribute shall be the DN of the related IucsLink instance. This is a reference attribute modelling the role (of the association ConnectedTo) that this csMgwFunction is connected to 0-* IucsLink.
csMgwFunction-ALink	READ-ONLY, M	The value of this attribute shall be the DN of the related ALink instance. This is a reference attribute modelling the role (of the association ConnectedTo) that this csMgwFunction is connected to 0-* ALink.

Table 64: Notifications of CsMgwFunction

Name	Qualifier	Notes
notifyAckStateChanged	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAttributeValueChange	O	
notifyChangedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyClearedAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyNewAlarm	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.4   Associations

6.4.1   Association `AssociatedWith` (M)

This bi-directional association models the relationship between the MscServerFunction and GSMCell/External GSM Cell, the SgsnFunction and GSMCell/ExternalGsmCell, and CsMgwFunction and MscServerFunction.
Each association has two roles. These two roles model each MOC's association with the other MOC. Each role is in the MOC definition mapped to a reference attribute with the same name.

6.4.1   Association `ConnectedTo` (M)

This uni-directional association models the relationship between the Alink/GbLink/IucsLink/IupsLink and the ConnectedBss, IucsLink/IupsLink/IubcLink and the ConnectedRnc, and CsMgwFunction and IucsLink/Alink.
Each association has one role. This role models the MOC's association with the other MOC. The role is in the MOC definition mapped to a reference attribute with the same name.

Annex A (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
Dec 2001	S_14	SP-010649	001	--	Removal of MOC FnrFunction from the diagrams	4.0.0	4.1.0
Jun 2002	S_16	SP-020302	002	--	Align with Rel-4 Network Architecture (23.002) by changing Roaming Signalling Gateway (R-SGW) to Signalling Gateway (SGW)	4.1.0	4.2.0
Sep 2002	S_17	SP-020489	003	--	Upgrade to Rel-5 the Network Resource Model for Core Network Management (add Managed Object Classes (MOCs)) [NOTE: Align with Rel-5 Network Architecture]	4.2.0	5.0.0

History

Document history		
V5.0.0	September 2002	Publication