Technical Specification Group Services and System Aspects
Meeting #17, Biarritz, France, 9-12 September 2002

TSGS#17(02)0489

Source: SA5 (Telecom Management)

Title: Rel-5 CRs 32.632/3 (Core Network Resources Integration Reference Point (IRP)) - upgrade to Rel-5

Document for: Approval

Agenda Item: 7.5.3

Doc-1st-	Spec	CR	Rev	Phase	Subject	Cat	Version	Doc-	Workite	Relation
SP-020489	32.632	003	-	Rel-5	**Upgrade to Rel-5 the Network Resource Model for Core Network Management (add Managed Object Classes (MOCs)**	C	4.2.0	S5-026720	OAM-NIM	**Parent CR**
SP-020489	32.633	002	-	Rel-5	**Upgrade to Rel-5 the CORBA SS for Core Network NRM (add Managed Object Classes (MOCs)**	C	4.1.0	S5-026736	OAM-NIM	**Child CR**

3GPP TSG-SA5 (Telecom Management) **S5-026720**
Meeting #30, Tampere, FINLAND, 19 – 23 August 2002

CR-Form-v5

CHANGE REQUEST

⌘ **32.632** **CR** **003** ⌘ **rev** **-** ⌘ Current version: **4.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Upgrade to Rel-5 the Network Resource Model for Core Network Management (add Managed Object Classes (MOCs)
Source:	⌘	S5
Work item code:	⌘	OAM-NIM
Date:	⌘	23/08/2002
Category:	⌘	**C**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	The model for the Core Network needs to be enhanced for Release 5.
Summary of change:	⌘	This CR contains a proposal for adding MOCs to the Core Network NRM to enhance it for Release 5.
Consequences if not approved:	⌘	Important aspects of the CN will not be modelled.

Clauses affected:	⌘	Clause 6.2, 6.3, 6.4.
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications **X** O&M Specifications 32.633 (CORBA SS)
Other comments:	⌘	"Child" Rel-5 CR 32.633 in S5-026736 S5-026720 Rel-5 CR 32632 Network Resource Model for Core Network Management - Parent CR S5-026736 Rel-5 CR 32633 CORBA Solution Set for Core Network NRM - Child CR

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.

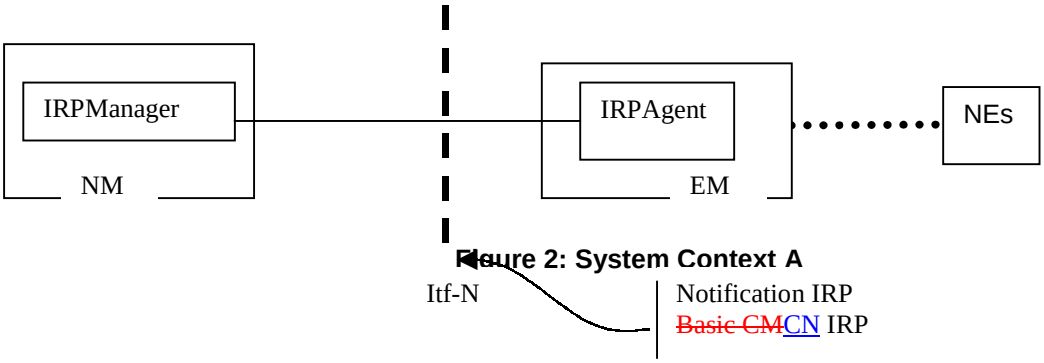


Figure 2: System Context A

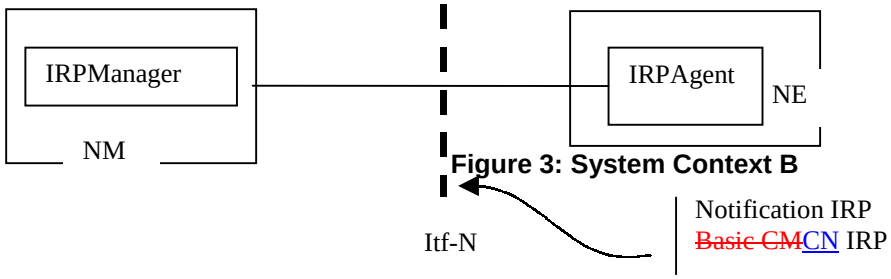


Figure 3: System Context B

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.

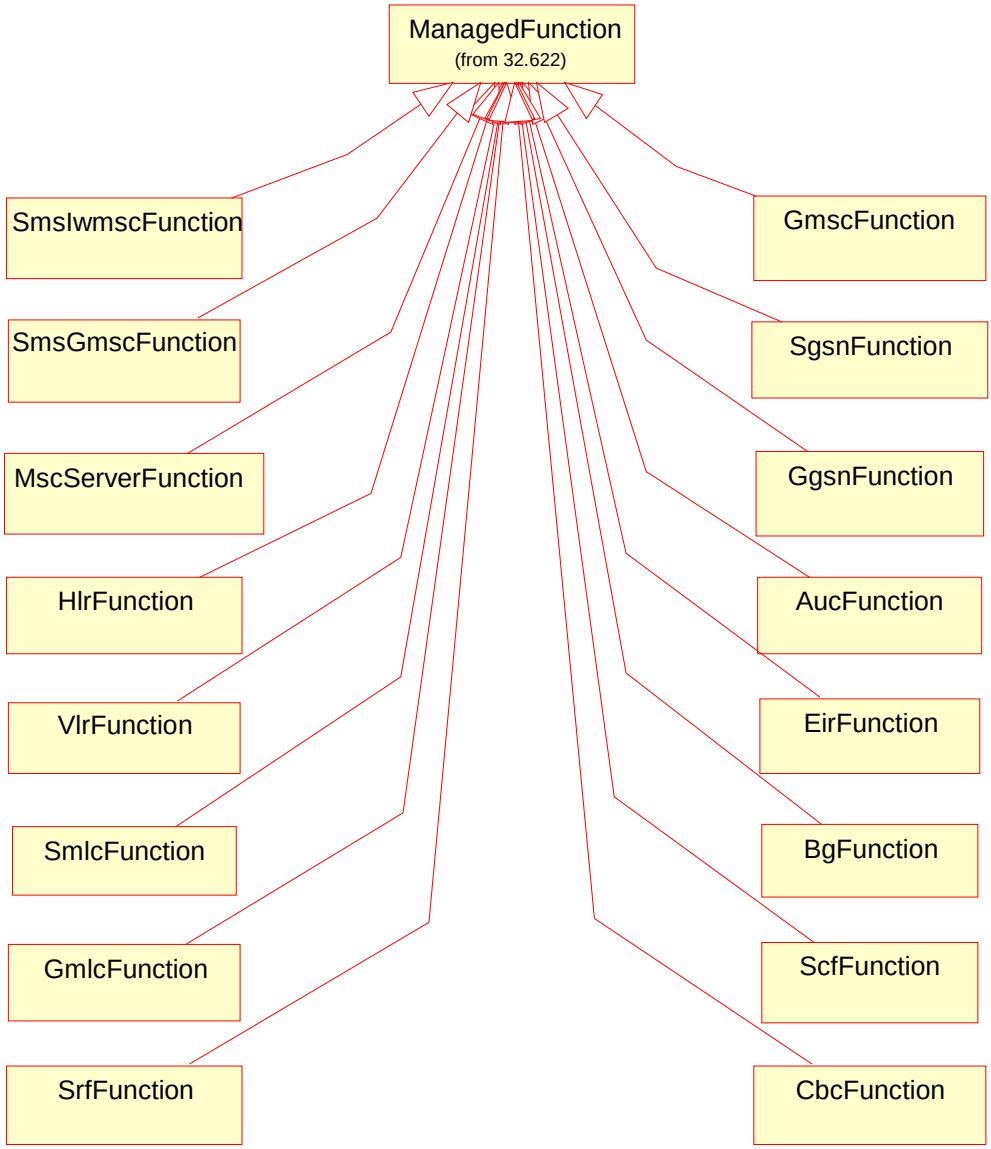
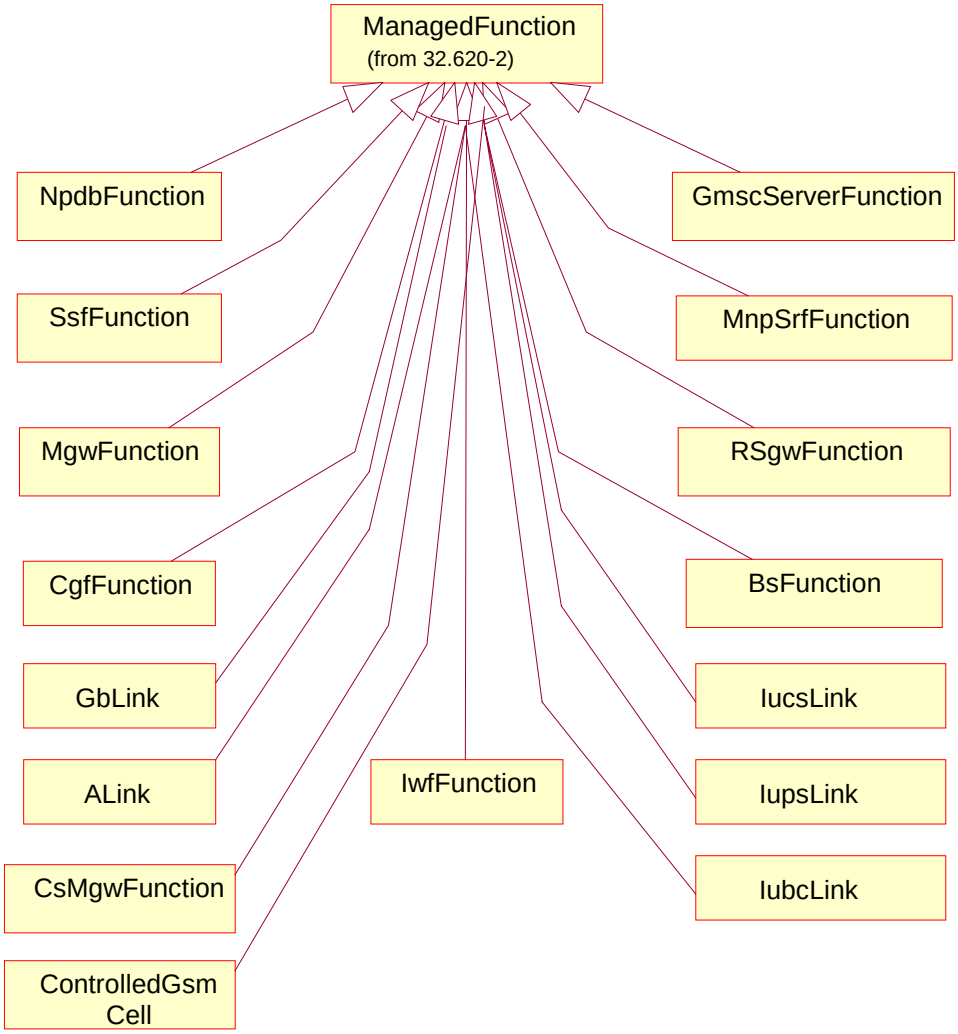


Figure 4: CN NRM Inheritance Hierarchy 1


ManagedFunction
(from 32.620-2)
NpdbFunction
SsfFunction
MgwFunction
CgfFunction
GbLink
ALink
CsMgwFunction
ControlledGsm Cell
IwfFunction
GmscServerFunction
MnpSrfFunction
RSgwFunction
BsFunction
IucsLink
IupsLink
IubcLink

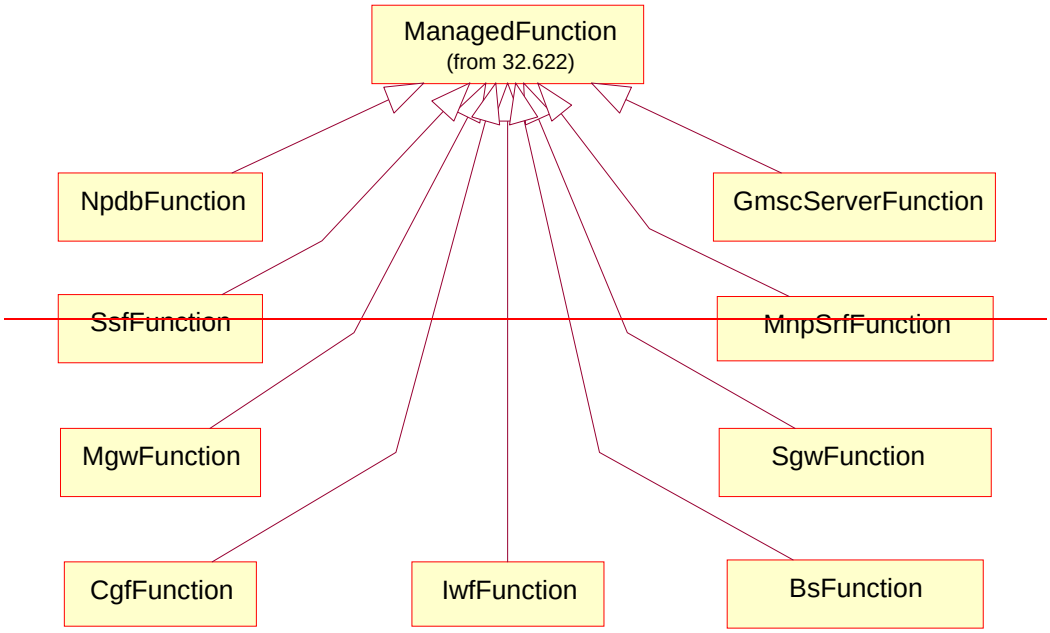
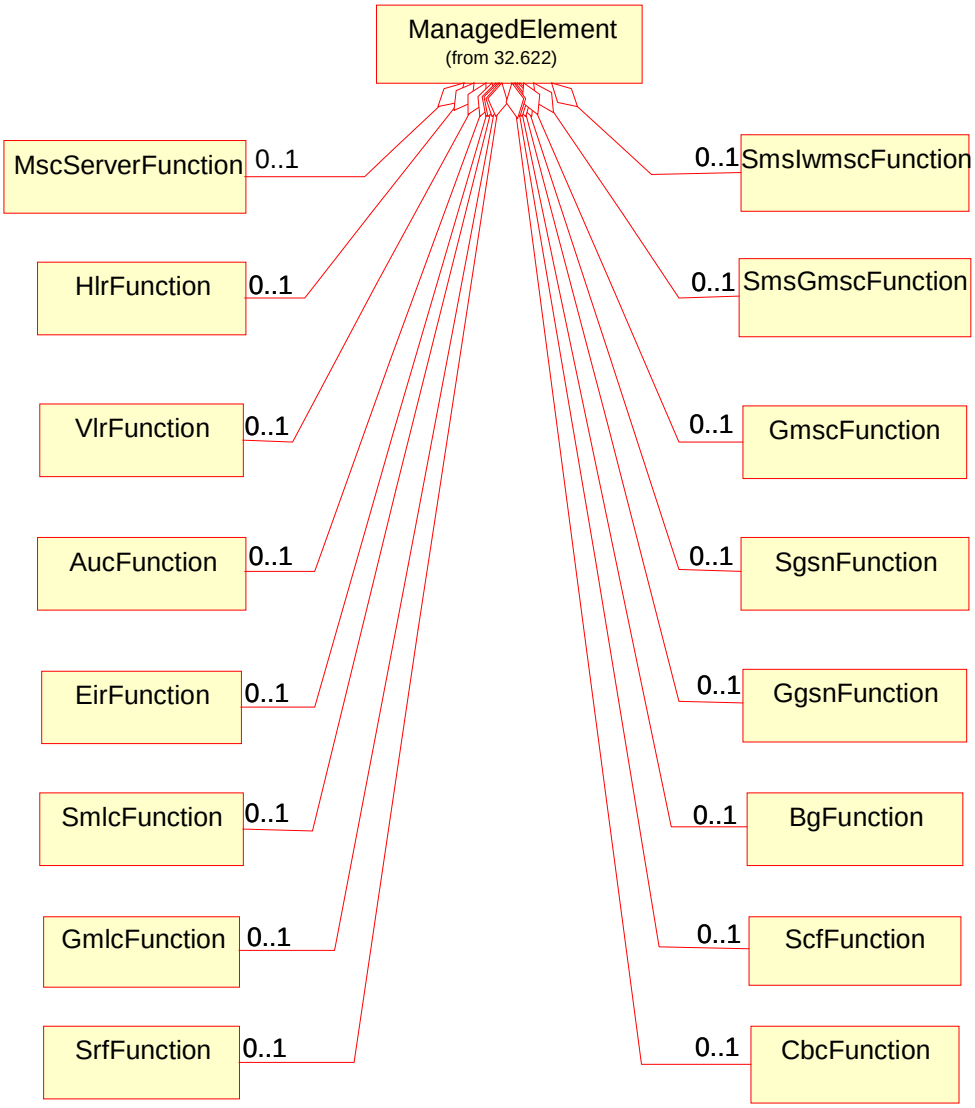


Figure 5: CN NRM Inheritance Hierarchy 2

6.2.2 Containment/Naming and Association diagrams

Figures 6, ~~and~~ 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

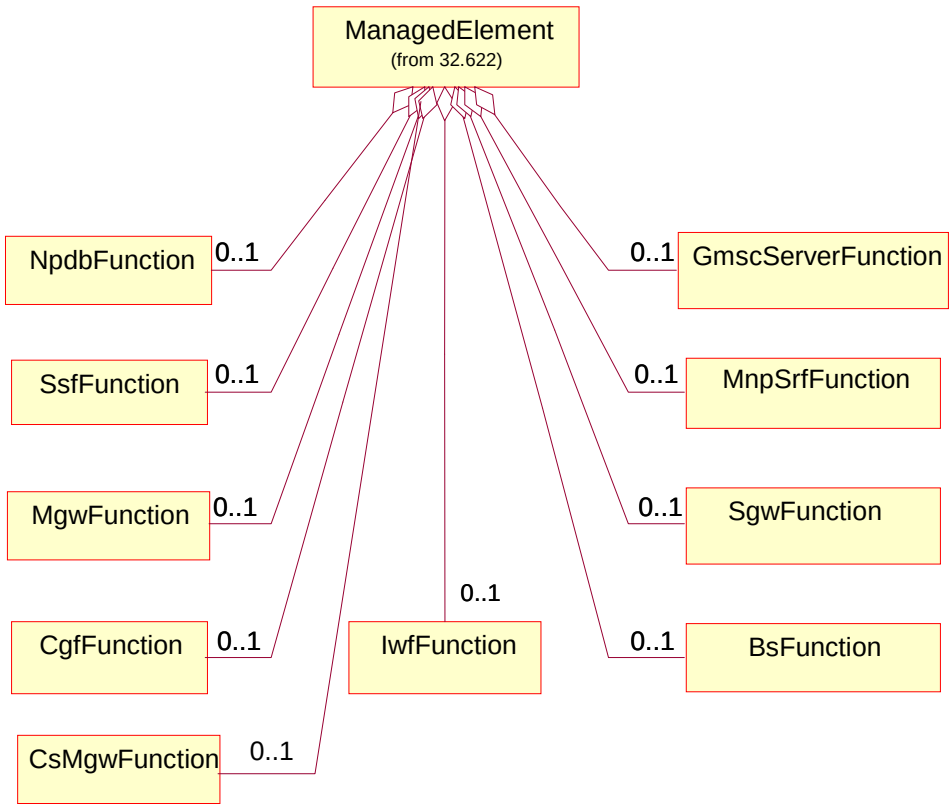


Figure 7: CN NRM Containment/Naming and Association diagram 2

~~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,MscFunction=MSC-1.~~

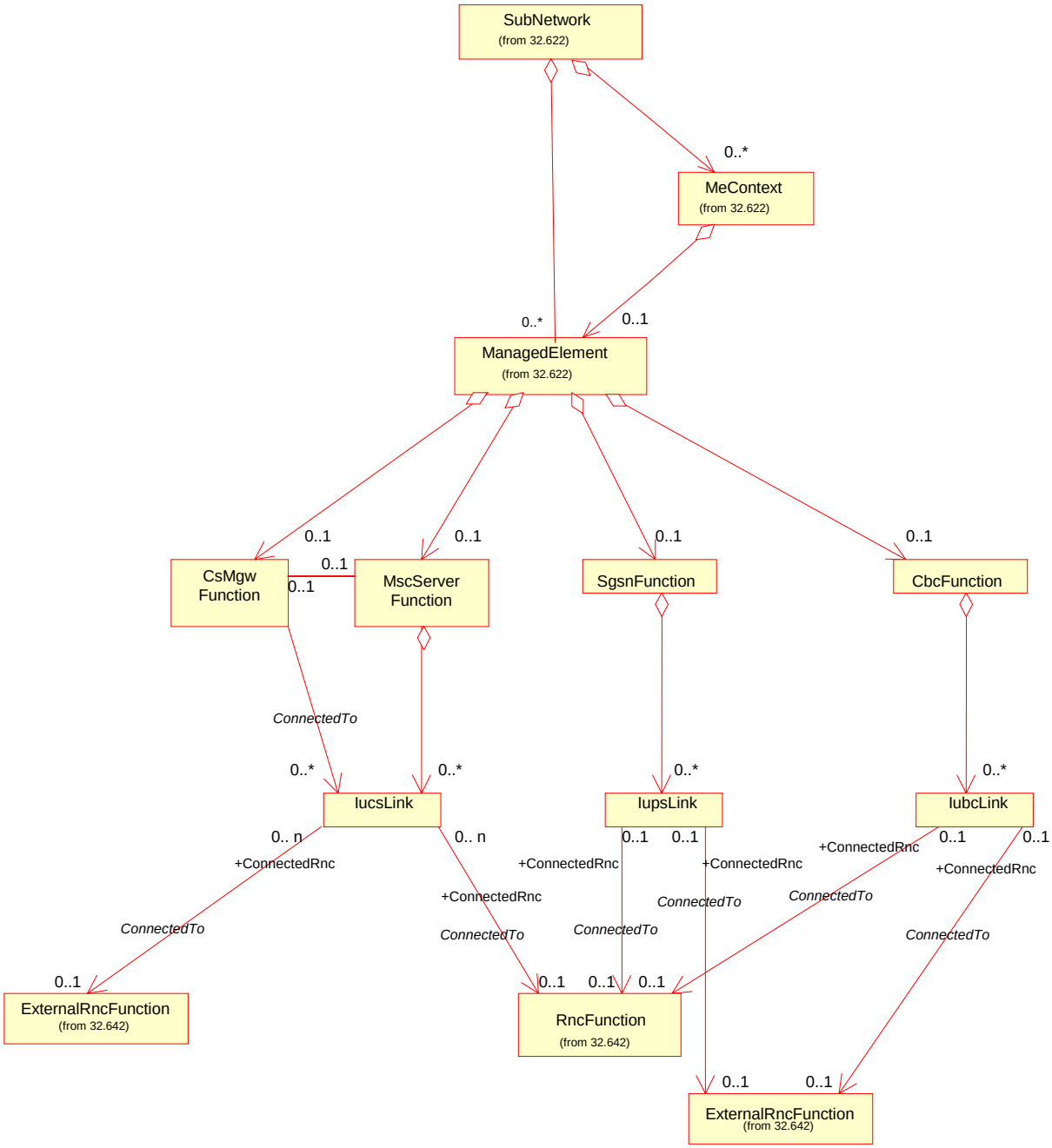


Figure 8: CN-UTRAN NRM Containment/Naming and Association diagram 3

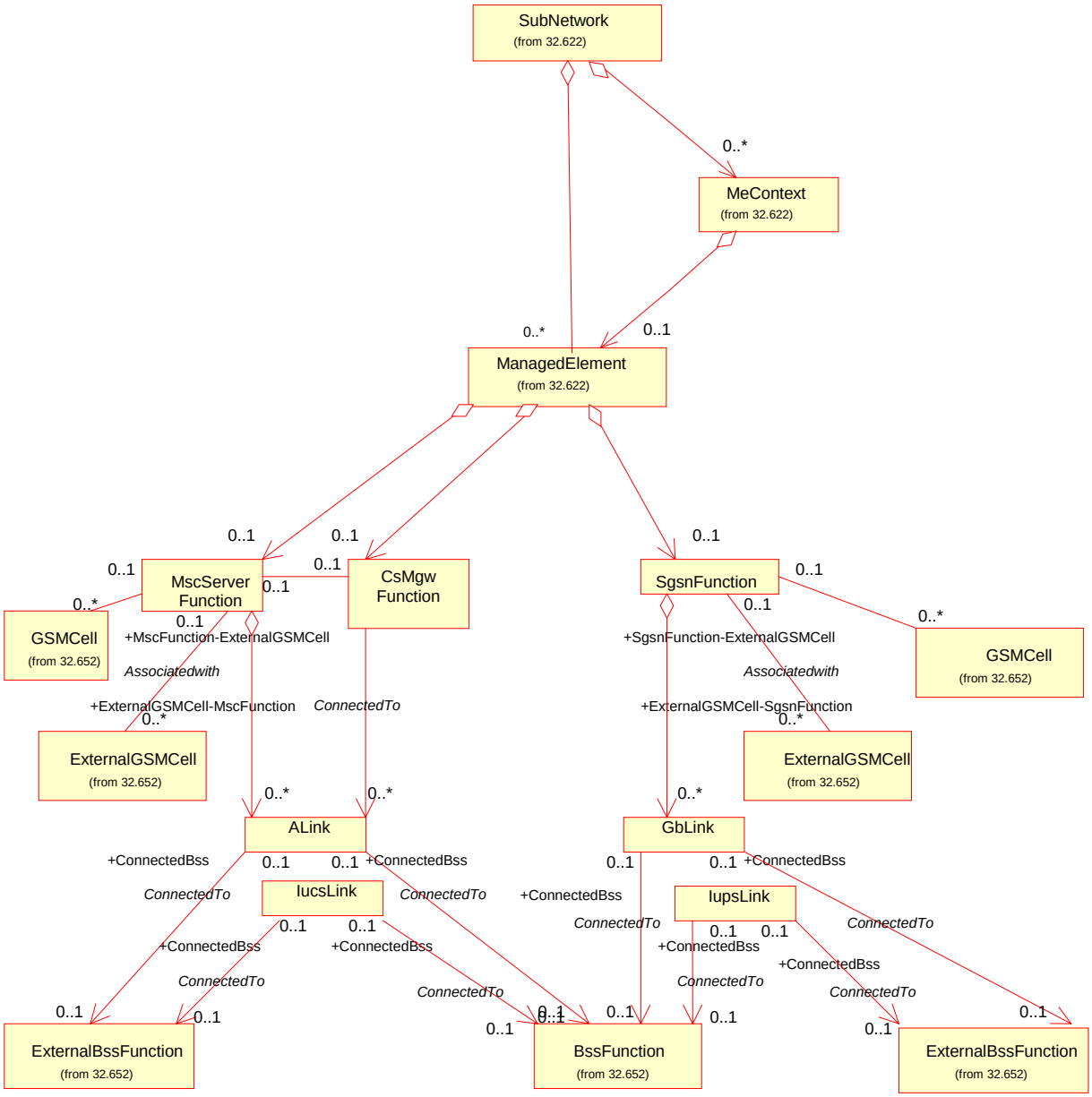
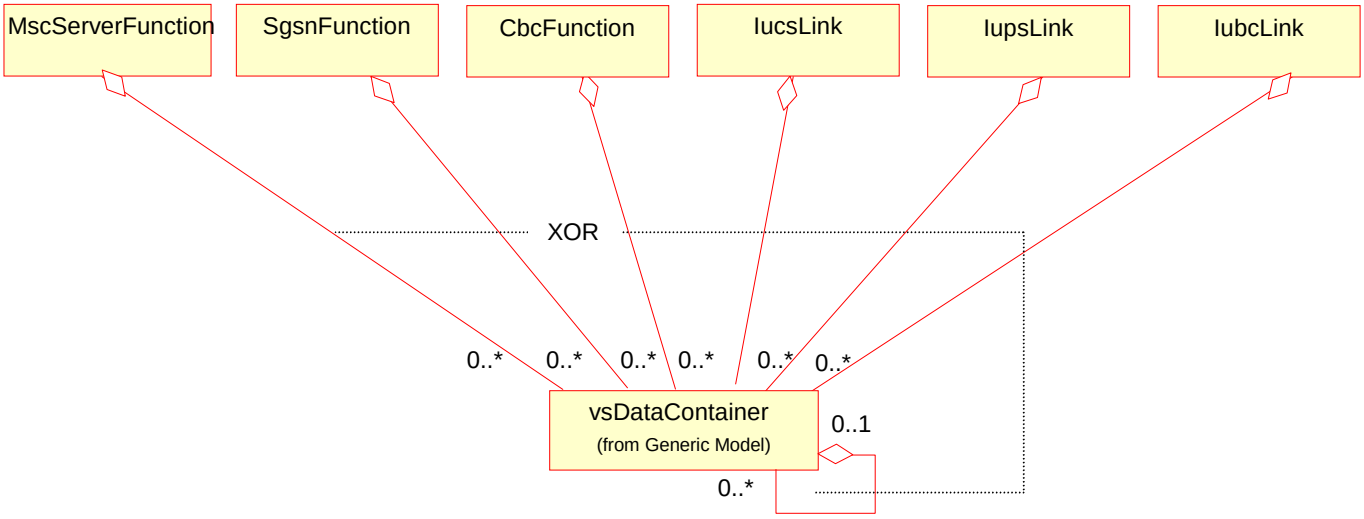


Figure 9: CN-GERAN NRM Containment/Naming and Association diagram 4

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

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~~ONLY~~, 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~~ONLY~~, 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~~ONLY~~, 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~~ONLY~~, 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~~ONLY~~, 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~~ONLY~~, 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~~ONLY~~, 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~~ONLY~~, 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~~ONLY~~, 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~~ONLY~~, 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~~ONLY~~, 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 ~~52~~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~~ONLY~~, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table ~~53~~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 5425: 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-WRITEONLY, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 5526: 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 5627: 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-WRITEONLY, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 5728: 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 5829: 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-WRITEONLY, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 5930: 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 6031: 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~~ONLY~~, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 6132: 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 6433: 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~~ONLY~~, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 6534: 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 6635: 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-WRITEONLY, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 6736: 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 7037: 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-WRITEONLY, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table 7138: 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.

Table ~~76~~39: Attributes of `IwfFunction`

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~~ONLY~~, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table ~~77~~40: Notifications of `IwfFunction`

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.

Table ~~78~~41: Attributes of `MnpSrfFunction`

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~~ONLY~~, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table ~~79~~42: Notifications of `MnpSrfFunction`

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 ~~80~~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~~ONLY~~, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table ~~81~~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 ~~82~~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~~ONLY~~, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table ~~83~~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 ~~84~~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~~ONLY~~, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table ~~85~~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 ~~86~~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~~ONLY~~, M	A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction.

Table ~~87~~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.

~~Void.~~

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
					Align with Rel-5 Network Architecture.	4.2.0	5.0.0

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CHANGE REQUEST

⌘ **32.633** **CR** **002** ⌘ **rev** **-** ⌘ Current version: **4.1.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Upgrade to Rel-5 the CORBA SS for Core Network NRM (add Managed Object Classes (MOCs)
Source:	⌘	S5
Work item code:	⌘	OAM-NIM
Date:	⌘	23/08/2002
Category:	⌘	**C**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	The CORBA Solution Set for Release 5 (32.633) needs to be changed to align it with the enhanced model for the Core Network (32.632).
Summary of change:	⌘	The CORBA Solution Set contains additional MOCs to align it with the enhanced model for the Core Network NRM .
Consequences if not approved:	⌘	Important aspects of the CN will not be modelled.

Clauses affected:	⌘	Introduction, 5.2 Annex A.
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	"Parent" Rel-5 CR 32.632 in S5-026720 S5-026720 Rel-5 CR 32632 Network Resource Model for Core Network Management - Parent CR S5-026736 Rel-5 CR 32633 CORBA Solution Set for Core Network NRM - Child CR

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).
The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

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.

~~Due to the growing number of specifications to model new services and Resource Models for Configuration Management (CM), as well as the expected growth in size of each of them from 3GPP Release 4 onwards, a new structure of the specifications is already needed in Release 4. This structure is needed for several reasons, but mainly to enable more independent development and release for each part, as well as a simpler document identification and version handling. Another benefit would be that it becomes easier for bodies outside 3GPP, such as the ITU-T, to refer to telecom management specifications from 3GPP. The new structure of the specifications does not lose any information or functionality supported by the Release 1999. The restructuring also includes defining new IRPs for the Network Resource Models (Generic, Core Network and UTRAN NRM).~~
~~Finally, the Name convention for Managed Objects (in Release 1999: 32.106-8) has been moved to a separate number series used for specifications common between several management areas (e.g. CM, FM, PM).~~
~~The following table shows an overview of the mapping between the old Release 1999 and new Release 4 CM specification structure.~~

Table: Mapping between Release '99 and the new Rel-4 specifications

R99 Old no.	Old (R99) specification title	Rel-4 New no.	New (Rel-4) specification title
32.106-1	3G Configuration Management: Concept and Requirements	32.600	**3G Configuration Management: Concept and High-level Requirements**
32.106-1	<Notification IRP requirements from 32.106-1 and 32.106-2>	32.301	**Notification IRP**: Requirements
32.106-2	Notification IRP: IS	32.302	Notification IRP: Information Service
32.106-3	Notification IRP: CORBA SS	32.303	Notification IRP: CORBA SS
32.106-4	Notification IRP: CMIP SS	32.304	Notification IRP: CMIP SS
32.106-8	Name convention for Managed Objects	32.300	**Name Convention for Managed Objects**
32.106-1	<Basic CM IRP IS requirements from 32.106-1 and 32.106-5>	32.601	**Basic CM IRP**: Requirements
32.106-5	Basic CM IRP IM (Intro & IS part)	32.602	Basic CM IRP: Information Service
32.106-6	Basic CM IRP CORBA SS (IS related part)	32.603	Basic CM IRP: CORBA SS
32.106-7	Basic CM IRP CMIP SS (IS related part)	32.604	Basic CM IRP: CMIP SS
32.106-8	Name convention for Managed Objects	32.300	**Name Convention for Managed Objects**
-	-	32.611	**Bulk CM IRP**: Requirements
-	-	32.612	Bulk CM IRP: Information Service
-	-	32.613	Bulk CM IRP: CORBA SS
-	-	32.614	Bulk CM IRP: CMIP SS
		32.615	Bulk CM IRP: XML file format definition
32.106-1	<Basic CM IRP Generic NRM requirements from 32.106-1 and 32.106-5>	32.621	**Generic Network Resources IRP**: Requirements
32.106-5	Basic CM IRP IM (Generic NRM part)	32.622	Generic Network Resources IRP: NRM
32.106-6	Basic CM IRP CORBA SS (Generic NRM related part)	32.623	Generic Network Resources IRP: CORBA SS
32.106-7	Basic CM IRP CMIP SS (Generic NRM related part)	32.624	Generic Network Resources IRP: CMIP SS
32.106-1	<Basic CM IRP CN NRM requirements from 32.106-1 and 32.106-5>	32.631	**Core Network Resources IRP**: Requirements
32.106-5	Basic CM IRP IM (CN NRM part)	32.632	Core Network Resources IRP: NRM
32.106-6	Basic CM IRP CORBA SS (CN NRM related part)	32.633	Core Network Resources IRP: CORBA SS
32.106-7	Basic CM IRP CMIP SS (CN NRM related part)	32.634	Core Network Resources IRP: CMIP SS
32.106-1	<Basic CM IRP UTRAN NRM requirements from 32.106-1 and 32.106-5>	32.641	**UTRAN Network Resources IRP**: Requirements
32.106-5	Basic CM IRP IM (UTRAN NRM part)	32.642	UTRAN Network Resources IRP: NRM
32.106-6	Basic CM IRP CORBA SS (UTRAN NRM related part)	32.643	UTRAN Network Resources IRP: CORBA SS
32.106-7	Basic CM IRP CMIP SS (UTRAN NRM related part)	32.644	UTRAN Network Resources IRP: CMIP SS
		32.651	**GERAN Network Resources IRP**: Requirements
		32.652	GERAN Network Resources IRP: NRM
		32.653	GERAN Network Resources IRP: CORBA SS
		32.654	GERAN Network Resources IRP: CMIP SS

1 Scope

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

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 32.632: “Core Network Resources IRP: NRM”.

[4] 3GPP TS 32.300: “Name Convention for Managed Objects”.

[5] 3GPP TS 32.303: “Notification IRP: CORBA Solution Set”.

3 Definitions and abbreviations

3.1 Definitions

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

3.2 Abbreviations

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

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

4 Architectural features

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

4.1 Notifications

Notifications are sent according to the Notification IRP: CORBA SS (see 3GPP TS 32.303 [5]).

5 Mapping

5.1 General mappings

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

5.2 Core Network NRM Managed Object Class (MOC) mapping

5.2.1 MOC MscServerFunction

Table 1: Mapping from NRM MOC MscServerFunction attributes to SS equivalent MOC MscServerFunction attributes

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

5.2.2 MOC HlrFunction

Table 2: Mapping from NRM MOC HlrFunction attributes to SS equivalent MOC HlrFunction attributes

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

5.2.3 MOC VlrFunction

Table 3: Mapping from NRM MOC VlrFunction attributes to SS equivalent MOC VlrFunction attributes

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

5.2.4 MOC AucFunction

Table 4: Mapping from NRM MOC AucFunction attributes to SS equivalent MOC AucFunction attributes

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

5.2.5 MOC EirFunction

Table 5: Mapping from NRM MOC EirFunction attributes to SS equivalent MOC EirFunction attributes

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

5.2.6 MOC SmsIwmscFunction

Table 6: Mapping from NRM MOC SmsIwmscFunction attributes to SS equivalent MOC SmsIwmscFunction attributes

NRM Attributes of MOC SmsIwmscFunction in 3GPP TS 32.632 [3]	SS Attributes	SS Type	Qualifier
smsIwmscFunctionId	smsIwmscFunctionId	string	Read-Only, M
userLabel	userLabel	string	Read-WriteOnly, M

5.2.7 MOC SmsGmscFunction

Table 7: Mapping from NRM MOC SmsGmscFunction attributes to SS equivalent MOC SmsGmscFunction attributes

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

5.2.8 MOC SgsnFunction

Table 8: Mapping from NRM MOC SgsnFunction attributes to SS equivalent MOC SgsnFunction attributes

NRM Attributes of MOC SgsnFunction in 3GPP TS 32.632 [3]	SS Attributes	SS Type	Qualifier
SgsnFunctionId	sgsnFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read-WriteOnly, M
mccList	mccList	long	Read-Write, M
mncList	mncList	long	Read-Write, M
lacList	lacList	long	Read-Write, M
racList	racList	long	Read-Write, M
sacList	sacList	long	Read-Write, M
sgsnId	sgsnId	long	Read-Write, M
Associated With/ sgsnFunction-GSMCell	sgsnFunction-GSMCell	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M
Associated With/ sgsnFunction-ExternalGSMCell	sgsnFunction-ExternalGSMCell	GenericNRIRPSystem::AttributeTypes::MOReference	Read-Only, M

5.2.9 MOC GgsnFunction

Table 9: Mapping from NRM MOC GgsnFunction attributes to SS equivalent MOC GgsnFunction attributes

NRM Attributes of MOC GgsnFunction in 3GPP TS 32.632 [3]	SS Attributes	SS Type	Qualifier
GgsnFunctionId	ggsnFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read-WriteOnly, M

5.2.10 MOC BgFunction

Table 10: Mapping from NRM MOC BgFunction attributes to SS equivalent MOC BgFunction attributes

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

5.2.11 MOC GmscFunction

Table 11: Mapping from NRM MOC GmscFunction attributes to SS equivalent MOC GmscFunction attributes

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

5.2.12 MOC SmlcFunction

Table 12: Mapping from NRM MOC SmlcFunction attributes to SS equivalent MOC SmlcFunction attributes

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

5.2.13 MOC GmlcFunction

Table 13: Mapping from NRM MOC GmlcFunction attributes to SS equivalent MOC GmlcFunction attributes

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

5.2.14 MOC ScfFunction

Table 14: Mapping from NRM MOC ScfFunction attributes to SS equivalent MOC ScfFunction attributes

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

5.2.15 MOC SrfFunction

Table 15: Mapping from NRM MOC SrfFunction attributes to SS equivalent MOC SrfFunction attributes

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

5.2.16 MOC CbcFunction

Table 16: Mapping from NRM MOC CbcFunction attributes to SS equivalent MOC CbcFunction attributes

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

5.2.17 MOC CgfFunction

Table 17: Mapping from NRM MOC CgfFunction attributes to SS equivalent MOC CgfFunction attributes

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

5.2.18 MOC MgwFunction

Table 18: Mapping from NRM MOC MgwFunction attributes to SS equivalent MOC MgwFunction attributes

NRM Attributes of MOC MgwFunction in 3GPP TS 32.632 [3]	SS Attributes	SS Type	Qualifier
MgwFunctionId	mgwFunctionId	string	Read-Only, M
UserLabel	userLabel	string	Read-WriteOnly, M

5.2.19 MOC GmscServerFunction

Table 19: Mapping from NRM MOC GmscServerFunction attributes to SS equivalent MOC GmscServerFunction attributes

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

5.2.20 MOC IwfFunction

Table 20: Mapping from NRM MOC IwfFunction attributes to SS equivalent MOC IwfFunction attributes

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

5.2.21 MOC MnpSrfFunction

Table 21: Mapping from NRM MOC MnpSrfFunction attributes to SS equivalent MOC IwfFunction attributes

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

5.2.22 MOC NpdbFunction

Table 22: Mapping from NRM MOC NpdbFunction attributes to SS equivalent MOC NpdbFunction attributes

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

5.2.23 MOC SgwFunction

Table 23: Mapping from NRM MOC SgwFunction attributes to SS equivalent MOC SgwFunction attributes

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

5.2.24 MOC SsfFunction

Table 24: Mapping from NRM MOC SsfFunction attributes to SS equivalent MOC SsfFunction attributes

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

5.2.25 MOC BsFunction

Table 25: Mapping from NRM MOC BsFunction attributes to SS equivalent MOC BsFunction attributes

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

5.2.26 MOC IucsLink

Table 26: Mapping from NRM MOC IucsLink attributes to SS equivalent MOC IucsLink attributes

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

5.2.27 MOC IupsLink

Table 27: Mapping from NRM MOC IupsLink attributes to SS equivalent MOC IupsLink attributes

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

5.2.28 MOC IubcLink

Table 28: Mapping from NRM MOC IubcLink attributes to SS equivalent MOC IubcLink attributes

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

5.2.29 MOC ALink

Table 29: Mapping from NRM MOC ALink attributes to SS equivalent MOC ALink attributes

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

5.2.30 MOC GbLink

Table 30: Mapping from NRM MOC GbLink attributes to SS equivalent MOC GbLink attributes

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

5.2.32 MOC CsMgwFunction

Table 32: Mapping from NRM MOC CsMgwFunction attributes to SS equivalent MOC CsMgwFunction attributes

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

6 Rules for NRM extensions

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

6.1 Allowed extensions

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

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

When subclassing, the 3GPP SA5-specified containment rules and their specified cardinality shall still be followed. As an example, `ManagementNode` (or its subclasses) shall be contained under `SubNetwork` (or its subclasses). Also, in Rel-4, there may only be 0 or 1 `ManagementNode` (or its subclasses) contained under `SubNetwork` (or its subclasses).

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

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

6.2 Extensions not allowed

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

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

Annex A (normative): CORBA IDL, NRM Definitions

```
#ifndef CoreNetworkResourcesNRMDefs_idl
#define CoreNetworkResourcesNRMDefs_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
      {
         const string CLASS = "MscServerFunction";

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


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

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


      /**
       *  Definitions for MO class VlrFunction
```

```
 */
interface VlrFunction
{
   const string CLASS = "VlrFunction";

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



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

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


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

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


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

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


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

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


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

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


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

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


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

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


   /**
    *  Definitions for MO class GmscFunction
    */
```

```
interface GmscFunction
{
   const string CLASS = "GmscFunction";

   // Attribute Names
   //
   const string gmscFunctionId = "gmscFunctionId";
   const string userLabel = "userLabel";
};


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

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



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

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


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

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



/**
 *  Definitions for MO class SrfFunction
 */
interface SrfFunction
{
   const string CLASS = "SrfFunction";
```

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


/**
 *  Definitions for MO class CbcFunction
 */
interface CbcFunction
{
   const string CLASS = "CbcFunction";

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


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

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


/**
 *  Definitions for MO class MgwFunction
 */
interface MgwFunction
{
   const string CLASS = "MgwFunction";

   // Attribute Names
   //
   const string mgwFunctionId = "mgwFunctionId";
   const string userLabel = "userLabel";
};



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

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

```
   const string userLabel = "userLabel";
};


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

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


/**
 *  Definitions for MO class MnpSrfFunction
 */
interface MnpSrfFunction
{
   const string CLASS = "MnpSrfFunction";

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


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

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


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

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


/**
```

```
     *  Definitions for MO class SsfFunction
     */
    interface SsfFunction
    {
       const string CLASS = "SsfFunction";

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


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

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


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

       // Attribute Names
       //
       const string iucsLinkId = "iucsLinkId";
       const string userLabel = "userLabel";
       const string connectedRnc = "connectedRnc";
       const string connectedBss = "connectedBss";
    };


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

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



    /**
```

```
        *  Definitions for MO class IubcLink
        */
       interface IubcLink
       {
          const string CLASS = "IubcLink";

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


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

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


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

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


/**
        *  Definitions for MO class CsMgwFunction
        */
       interface CsMgwFunction
       {
          const string CLASS = "CsMgwFunction";

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

```
};

#endif
```

Annex B (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Jun 2001	S_12	SP-010283	--	--	Approved at TSG SA #12 and placed under Change Control	2.0.0	4.0.0
Jun 2002	S_16	SP-020302	001	--	Align with Rel-4 Network Architecture (23.002) by changing Roaming Signalling Gateway (R-SGW) to Signalling Gateway (SGW)	4.0.0	4.1.0
					Align with Rel-5 Architecture.	4.1.0	5.0.0