TSGS#27(05)0046

Source: SA5 (Telecom Management)

Title: CR 32622-3-5 Configuration Management (CM) Generic network resources IRP

Document for: Approval

Agenda Item: 7.5.3

Doc-1st-Level	Spec	CR	R	Phase	Subject	Ca	VerCr	Doc-2nd-Level	Workitem
SP-050046	32.625	015	--	Rel-5	Error corrections to genericNRM.xsd	F	5.4.0	S5-058170	OAM-NIM
SP-050046	32.625	016	--	Rel-6	Error corrections to genericNRM.xsd	A	6.3.0	S5-058171	OAM-NIM
SP-050046	32.622	022	--	Rel-6	Add Link class to generic NRM Information Service	B	6.2.0	S5-058165	OAM-NIM
SP-050046	32.623	015	--	Rel-6	Add Link to generic NRM CORBA SS	B	6.3.0	S5-058164	OAM-NIM
SP-050046	32.625	014	--	Rel-6	Add genericNRM.xsd for new IMS Links	B	6.3.0	S5-058168	OAM-NIM

CR-Form-v7.1

CHANGE REQUEST

⌘ 32.623 CR 015 ⌘rev - ⌘ Current version: 6.3.0 ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [ ] Radio Access Network [X] Core Network [X]

Title:	⌘	Add Link to generic NRM CORBA SS
Source:	⌘	SA5 (islip@lucent.com)
Work item code:	⌘	OAM-NIM
Date:	⌘	28/01/2005
Category:	⌘	B
Release:	⌘	Rel-6

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:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change:	⌘	Addition of links for IMS requires the addition of link class to generic NRM aligned with 3GPP2
Summary of change:	⌘	Addition of link MOC
Consequences if not approved:	⌘	

Clauses affected:	⌘	Clause 1 – to update the pointer to the IS version 5.2.10 this is a new clause for adding the "Link" MOC. Annex A1 Adding style guide updates Annex B1 amendments for the IDL style guide, and addition of Link MOC.

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘

Change in Clause 1

1 Scope

The TS 32.62x-series (Generic Network Resources IRP) define an Integration Reference Point (IRP) through which an "IRPAgent" (typically an Element Manager or Network Element) can communicate Network Management related information to one or several "IRPManagers" (typically Network Managers).

This TS-family specifies a generic Network Resource Model, NRM (also referred to as a Management Information Model - MIM) with definitions of Information Object Classes (IOCs) and Managed Object Classes (MOCs).

The present document specifies the CORBA Solution Set.

This Solution Set specification is related to 3GPP TS 32.622 V6.3~~2~~.X.

End Change in Clause 1

Change in Clause 5.2.10

5.2.10 IOC Link

Mapping from NRM IOC Link attributes to SS equivalent MOC IRPAgent attributes

NRM Attributes of IOC Top in 3GPP TS 32.622 [4]	SS Attributes	SS Type	Qualifier
linkId	linkId	string	Read-Only, M
objectClass (see note 1)	CLASS	string	Read-Only, M
objectInstance (see note 1)	No direct mapping		Read-Only, M
userLabel (see note 2)	userLabel	string	Read-Write, M
aEnd	aEnd	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, M
zEnd	zEnd	GenericNetworkResourcesIRPSystem::AttributeTypes::MOReference	Read-Only, M
linkType	linkType	LinkTypeType	Read-Only, O
protocolName	protocolName	string	Read-Only, O
protocolVersion	protocolVersion	string	Read-Only, O
Note1:- this attribute is inherited from **ManagedFunction via Top**			
Note2:- this attribute is inherited from **ManagedFunction**			

End of Change in Annex 5.2.10
End of Document

Annex A (normative): IDL specifications

End of Change in Annex A1

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

```
//File: GenericNetworkResourcesIRPSystem.idl
#ifndef
GenericNetworkResourcesIRPSystemGENERICNETWORKRESOURCESIRPSYSTEM_idl_IDL_
#define
GENERICNETWORKRESOURCESIRPSYSTEM_IDL_GenericNetworkResourcesIRPSystem_idl


#pragma prefix "3gppsa5.org"


module GenericNetworkResourcesIRPSystem
{
   /**
    * The format of Distinguished Name (DN) is specified in "Name Convention
    * for Managed Objects (3GPP TS 32.300 [5])".
    */
   typedef string DN;


   /**
    *  This module adds datatype definitions for types
    *  used in the NRM which are not basic datatypes defined
    *  already in CORBA.
    */
   module AttributeTypes
   {
      /**
       * An MO reference refers to an MO instance.
       * "otherMO" contains the  distinguished name of the referred MO.
       * A conceptual "null" reference (meaning no MO is referenced)
       * is represented as an empty string ("").
       *
       */
      struct MOReference
      {
         DN otherMO;
      };

      /**
       * MOReferenceSet represents a set of MO references.
       * This type is used to hold 0..n MO references.
       * A referred MO is not allowed to be repeated (therefore
       * it is denoted as a "Set")
       */
      typedef sequence<MOReference> MOReferenceSet;


      /**
       *  A set of strings.
       */
      typedef sequence<string> StringSet;

      /**
       *  A set of long.
       */
      typedef sequence<long> LongSet;
   };

};

#endif // GENERICNETWORKRESOURCESIRPSYSTEM_IDL_
```

End of Change in Annex A.1

Annex B (normative): IDL specifications

Change in Annex B.1

B.1 IDL specification (file name "GenericNetworkResourcesNRMDefs.idl")

```
//File: GenericNetworkResourcesNRMDefs.idl
#ifndef GenericNetworkResourcesNRMDefs_idl_GENERICNETWORKRESOURCESNRMDEFS_IDL_
#define _GENERICNETWORKRESOURCESNRMDEFS_IDL_GenericNetworkResourcesNRMDefs_idl

#pragma prefix "3gppsa5.org"

/**
 * This module defines constants for each MO class name and
 * the attribute names for each defined MO class.
 */
module GenericNetworkResourcesNRMDefs
{
      /**
       *  Definitions for MO class Top
       */
      interface Top
      {
         // Attribute Names
         //
         const string CLASS = "Top";
      };

      /**
       *  Definitions for MO class SubNetwork
       */
      interface SubNetwork : Top
      {
         const string CLASS = "SubNetwork";

         // Attribute Names
         //
         const string subNetworkId = "subNetworkId";
         const string dnPrefix = "dnPrefix";
         const string userLabel = "userLabel";
         const string userDefinedNetworkType = "userDefinedNetworkType";
         const string setOfMcc = "setOfMcc";
      };

      /**
       *  Definitions for MO class ManagedElement
       */
      interface ManagedElement : Top
      {
         const string CLASS = "ManagedElement";

         // Attribute Names
         //
```

```
   const string managedElementId = "managedElementId";
   const string dnPrefix = "dnPrefix";
   const string managedElementType = "managedElementType";
   const string userLabel = "userLabel";
   const string vendorName = "vendorName";
   const string userDefinedState ="userDefinedState";
   const string locationName ="locationName";

   const string managedBy = "managedBy";

   const string swVersion = "swVersion";

};


/**
 *  Definitions for MO class MeContext
 */
interface MeContext : Top
{
   const string CLASS = "MeContext";

   // Attribute Names
   //
   const string meContextId = "meContextId";
   const string dnPrefix = "dnPrefix";
};

/**
 *  Definitions for MO class ManagementNode
 */
interface ManagementNode : Top
{
   const string CLASS = "ManagementNode";

   // Attribute Names
   //
   const string managementNodeId = "managementNodeId";
   const string userLabel = "userLabel";
   const string vendorName = "vendorName";
   const string userDefinedState = "userDefinedState";
   const string locationName = "locationName";
   const string managedElements = "managedElements";

   const string swVersion = "swVersion";
};


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

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


/**
 *  Definitions for MO class IRPAgent
 */
interface IRPAgent : Top
```

```
        {
            const string CLASS = "IRPAgent";

            // Attribute Names
            //
            const string irpAgentId = "irpAgentId";
            const string systemDN = "systemDN";
        };
        /**
         *  Definitions for abstract MO class Link
         *  This inherits from ManagedFunction
         *  The attributes aEnd and zEnd are populated with the DNs
         *  of the entities associated via the link class.
         *  The aEnd takes the DN of the 1st entity in alphabetical order,
         *  the zEnd takes the 2nd entity in alphabetical order of the class
         *  names.
         */
        interface Link : ManagedFunction
        {
            const string CLASS = "Link";

            // Attribute Names
            //
            const string linkId = "linkId";
            const string aEnd = "aEnd";
            const string zEnd = "zEnd";
            const string linkType = "linkType";
            const string protocolName = "protocolName";
            const string protocolVersion = "protocolVersion";
        };
        /**
         *  Definitions for MO class VsDataContainer
         */
        interface VsDataContainer : Top
        {
            const string CLASS = "VsDataContainer";

            // Attribute Names
            //
            const string vsDataContainerId = "vsDataContainerId";
            const string vsDataType = "vsDataType";
            const string vsData = "vsData";
            const string vsDataFormatVersion = "vsDataFormatVersion";
        };
/**
    *  This module adds datatypes definitions for the Link Class
    *  These attributes are not the basic datatypes already defined
    */
module LinkAttributeTypes
{
        enum LinkType
        {
            Signalling,
            Bearer,
            OAM&P'
            Other
        };

        typedef sequence <LinkType> LinkTypeType;
};

};

#endif // _GENERICNETWORKRESOURCESNRMDEFS_IDL_
```

End of Change in Annex B.1
End of Document

Annex C (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Sep 2004	S_25	SP-040581	014	--	Add Inheritance in CORBA IDL	6.2.0	6.3.0

3GPP TSG-SA5 (Telecom Management) ***Tdoc ⌘S5-058165***
Meeting #41, Lisbon, PORTUGAL, 24 - 28 January 2005

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CHANGE REQUEST

⌘ **32.622** **CR** **022** ⌘ **rev** **-** ⌘ Current version: **6.3.0** ⌘

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Proposed change affects: UICC apps⌘ [ ] ME [ ] Radio Access Network [X] Core Network [X]

Title:	⌘	Add Link class to generic NRM Information Service
Source:	⌘	SA5 (islip@lucent.com)
Work item code:	⌘	OAM-NIM
Date:	⌘	18/02/2005
Category:	⌘	**B**
Release:	⌘	Rel-6

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:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	In ability to manage IMS links
Summary of change:	⌘	Addition of link MOC to align with 3GPP2 approach Updates to align with the CORBA SS style guide.
Consequences if not approved:	⌘	
Clauses affected:	⌘	6.1 – class and inheritance diagram changes 6.1.3.10 new clause for the link class 6.1.5.1 definition of new attributes for link, and Legal values has had additional refereence to TS 32.300 added for "Id" attributes. Editorial changes 6.1.1 Table aphabetically ordered by local label name The following clauses have had IOC names changed to Courier font. 6.1.3.1, 6.1.3.2, 6.1.3.3,6.1.3.4, 6.1.3.5, 6.1.3.6, 6.1.3.7, 6.1.3.8, 6.1.3.9, 6.1.4.1

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

6 Information Object Class (IOC) definitions

6.1 Information Object Classes

6.1.1 Imported Information entities and local labels

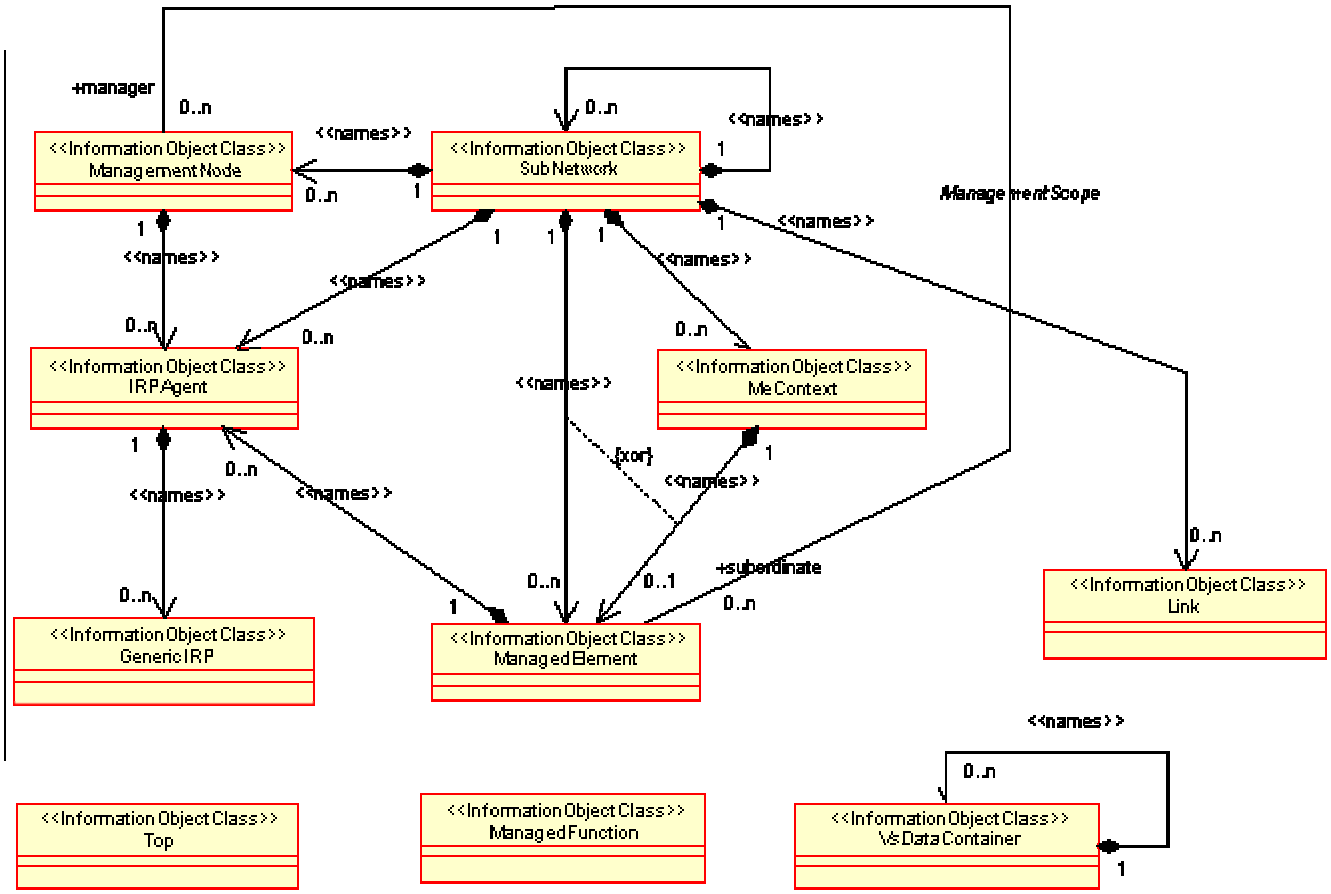
Label reference	Local label
3GPP TS 32.111-2 [11], notification, notifyAckStateChanged	notifyAckStateChanged
3GPP TS 32.662 [17], notification, notifyAttributeValueChanged	notifyAttributeValueChanged
3GPP TS 32.111-2 [11], notification, notifyChangedAlarm	notifyChangedAlarm
3GPP TS 32.111-2 [11], notification, notifyClearedAlarm	notifyClearedAlarm
3GPP TS 32.111-2 [11], notification, notifyComments	notifyComments
3GPP TS 32.111-2 [11], notification, notifyNewAlarm	notifyNewAlarm
3GPP TS 32.662 [17], notification, notifyObjectCreation	notifyObjectCreation
3GPP TS 32.662 [17], notification, notifyObjectDeletion	notifyObjectDeletion
~~Label reference~~	~~Local label~~
~~3GPP TS 32.111-2 [11], notification, notifyAckStateChanged~~	~~notifyAckStateChanged~~
~~3GPP TS 32.111-2 [11], notification, notifyChangedAlarm~~	~~notifyChangedAlarm~~
~~3GPP TS 32.111-2 [11], notification, notifyClearedAlarm~~	~~notifyClearedAlarm~~
~~3GPP TS 32.111-2 [11], notification, notifyNewAlarm~~	~~notifyNewAlarm~~
~~3GPP TS 32.111-2 [11], notification, notifyComments~~	~~notifyComments~~
~~3GPP TS 32.662 [17], notification, notifyAttributeValueChanged~~	~~notifyAttributeValueChanged~~
~~3GPP TS 32.662 [17], notification, notifyObjectCreation~~	~~notifyObjectCreation~~
~~3GPP TS 32.662 [17], notification, notifyObjectDeletion~~	~~notifyObjectDeletion~~

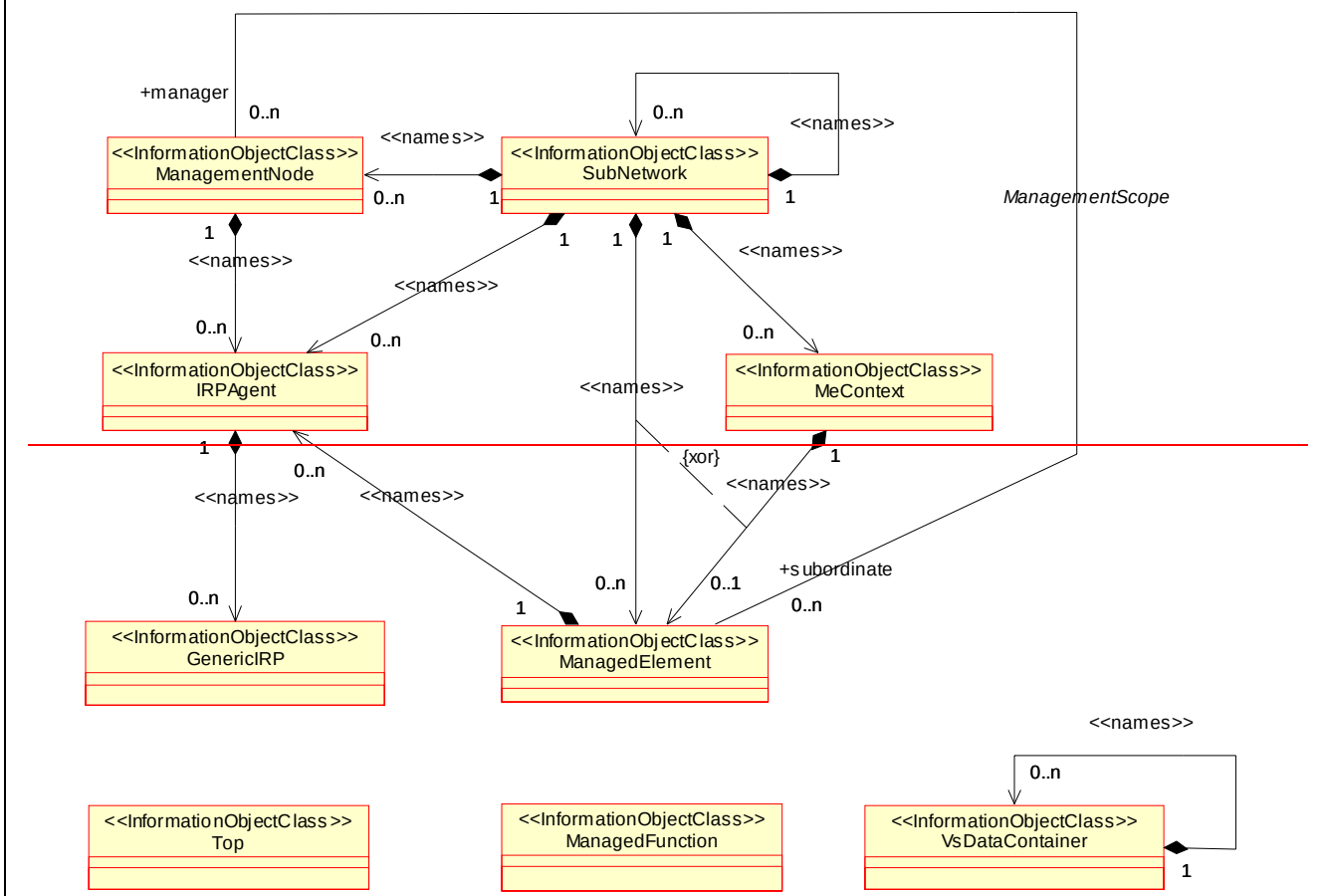
6.1.2 Class diagram

6.1.2.1 Attributes and relationships

This sub-clause depicts the set of IOCs that encapsulate information relevant for this service. This sub-clause provides the overview of all information object classes in UML. Subsequent subclauses provide more detailed specification of various aspects of these information object classes.

Figure 6.1 shows the containment/naming hierarchy and the associations of the generic information object classes defined in the present document.


+manager
0..n
<<names>>
<<Information Object Class>>
ManagementNode
<<Information Object Class>>
SubNetwork
ManagementScope
<<Information Object Class>>
IRPAgent
<<Information Object Class>>
MeContext
{xor}
<<Information Object Class>>
GenericIRP
<<Information Object Class>>
ManagedElement
+subordinate
<<Information Object Class>>
Link
<<Information Object Class>>
Top
<<Information Object Class>>
ManagedFunction
<<Information Object Class>>
VsDataContainer

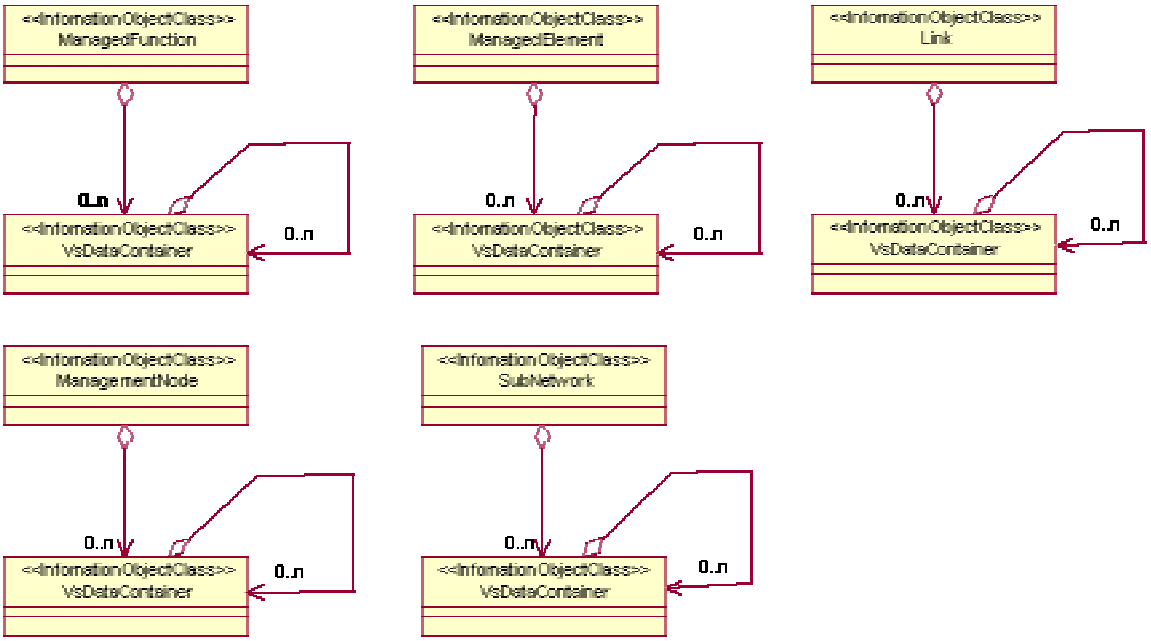

+manager
0..n
<<names>>
<<InformationObjectClass>>
ManagementNode
<<InformationObjectClass>>
SubNetwork
ManagementScope
<<InformationObjectClass>>
IRPAgent
<<InformationObjectClass>>
MeContext
{xor}
<<InformationObjectClass>>
GenericIRP
<<InformationObjectClass>>
ManagedElement
+subordinate
<<InformationObjectClass>>
Top
<<InformationObjectClass>>
ManagedFunction
<<InformationObjectClass>>
VsDataContainer

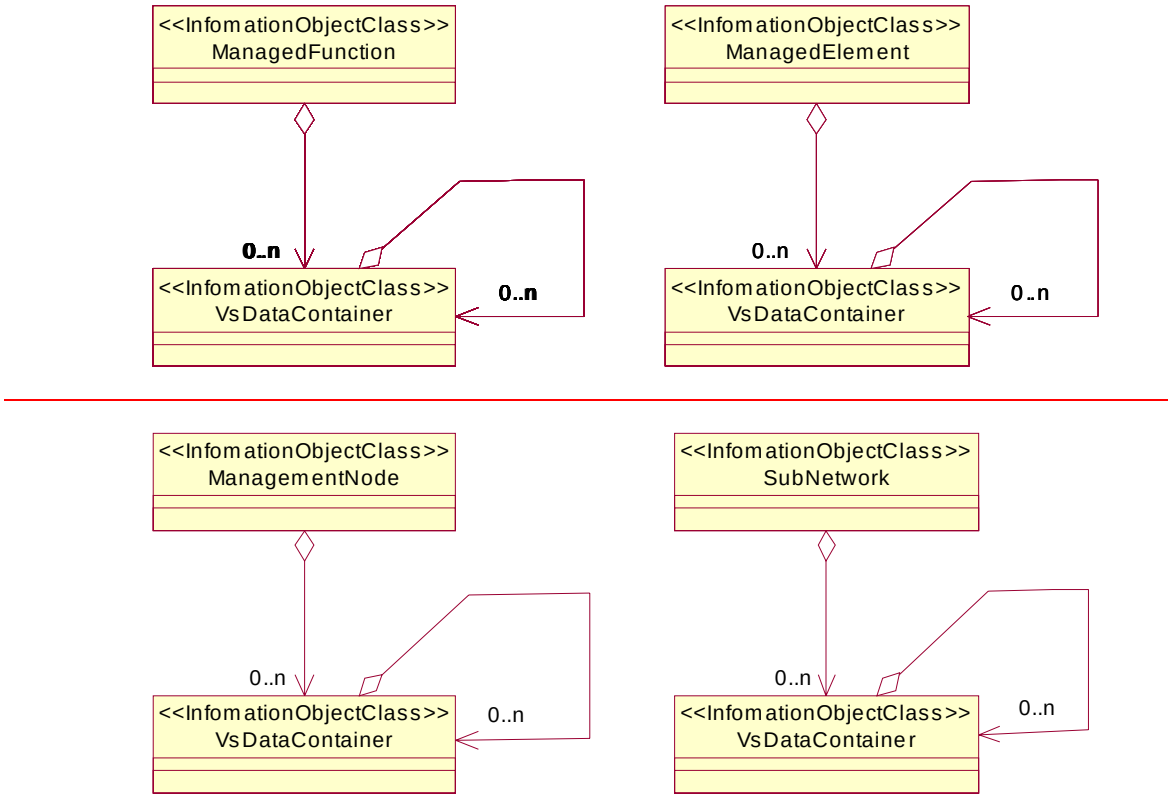
NOTE 1: ManagedElement may be contained in either a SubNetwork or an MeContext instance (also shown by the {xor} constraint), or have no parent instance at all.
NOTE 2: The listed cardinality numbers represent transient as well as steady-state numbers, and reflect all managed object creation and deletion scenarios.
NOTE 3: Each instance of the VsDataContainer shall only be contained under one IOC. The VsDataContainer can be contained under IOCs defined in other NRMs.
NOTE 4: If the configuration contains several instances of SubNetwork, exactly one SubNetwork instance shall directly or indirectly contain all the other SubNetwork instances.
NOTE 5: The SubNetwork instance not contained in any other instance of SubNetwork is referred to as "the root SubNetwork instance".
NOTE 6: ManagementNode shall be contained in the root SubNetwork instance.
NOTE 7: If contained in a SubNetwork instance, IRPAgent shall be contained in the root SubNetwork instance.
NOTE 8: For a clarification on the choice of containment of the IRPAgent (since it has three possible parents), see the def. of IRPAgent.

Figure 6.1: Generic NRM Containment/Naming and Association diagram

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 ManagedElement instance could have a format like:

SubNetwork=Sweden,MeContext=MEC-Gbg-1,ManagedElement=RNC-Gbg-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 IOC. The vsDataContainer can be contained under IOCs defined in other NRMs by virtue of inheritance from the GENERIC NRM.

Figure 6.2: vsDataContainer Containment/Naming and Association in GENERIC NRM diagram

The vsDataContainer is only used for the Bulk CM IRP.

6.1.2.2 Inheritance

This clause depicts the inheritance relationships that exist between information object classes.

Figure 6.3 shows the inheritance diagram.

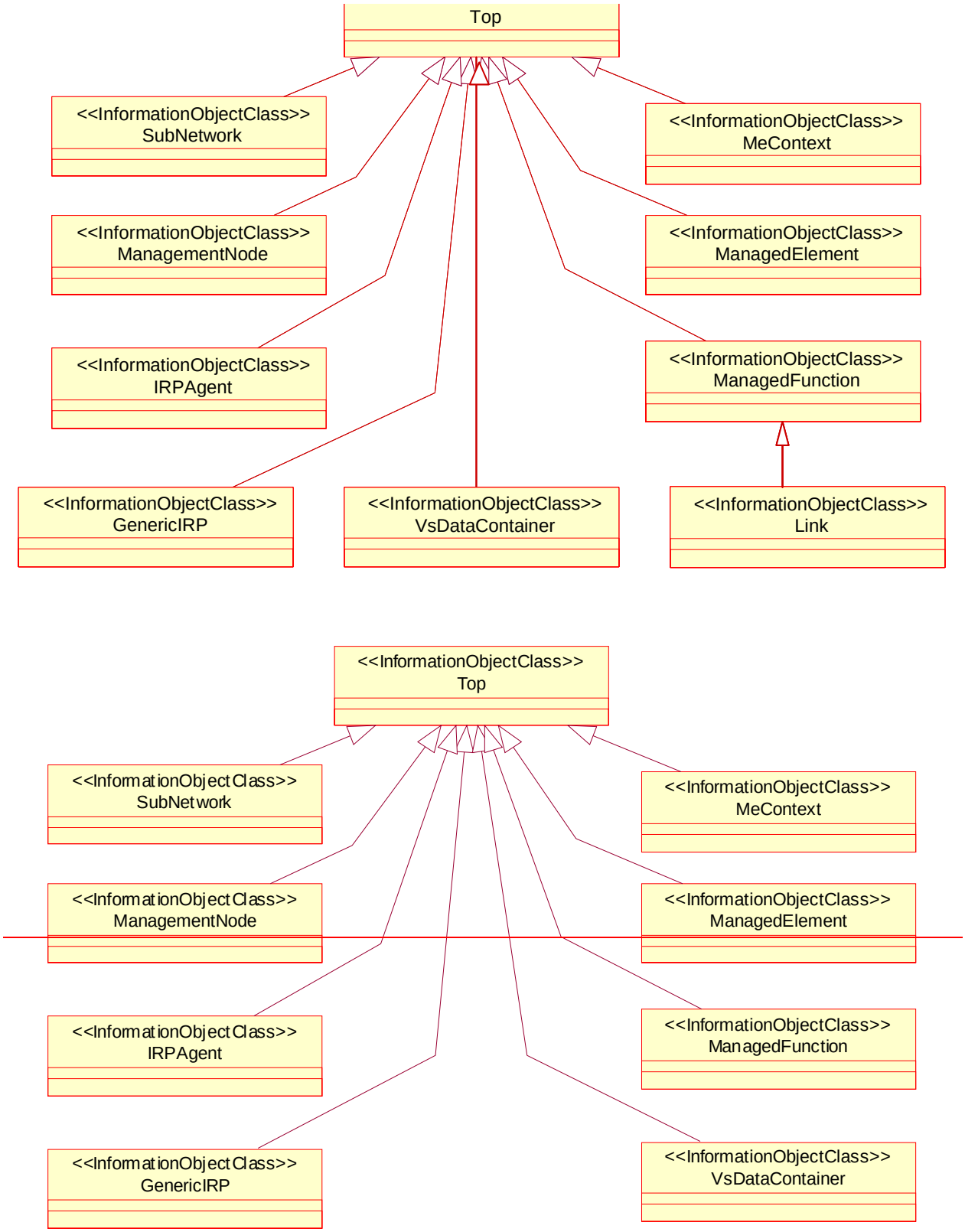


Figure 6.3: Generic Network Resource Model IRP Inheritance Hierarchy

6.1.3 Information object class definitions

6.1.3.1 GenericIRP~~GenericIRP~~

6.1.3.1.1 Definition

This IOC represents the IRP capability associated with each IRPAgent. This IOC cannot be instantiated. It is defined for sub-classing purposes. At least one instance of a sub-class of GenericIRP shall be present for every IRPAgent instance.

6.1.3.1.2 Attributes

Table 6.1: Attributes of GenericIRP

Attribute Name	Support Qualifier	Read Qualifier	Write Qualifier
iRPId	M	M	-

6.1.3.2 IRPAgent~~IRPAgent~~

6.1.3.2.1 Definition

This IOC represents the functionality of an IRPAgent. It shall be present. For a definition of IRPAgent~~IRPAgent~~, see 3GPP TS 32.102 [2].

The~~ IRPAgent~~ ~~IRPAgent~~ will be contained under an IOC as follows (only one of the options shall be used):

1. ~~ManagementNode~~ManagementNode, if the configuration contains a ManagementNode~~ManagementNode~~;
2. SubNetwork~~SubNetwork~~, if the configuration contains a SubNetwork~~SubNetwork~~ and no ManagementNode~~ManagementNode~~;
3. ManagedElement, if the configuration contains no ~~ManagementNode~~ManagementNode or SubNetwork~~SubNetwork~~.

6.1.3.2.2 Attributes

Table 6.2: Attributes of IRPAgent

Attribute Name	Support Qualifier	Read Qualifier	Write Qualifier
iRPAgentId	M	M	-
systemDN	C	M	-

6.1.3.2.3 Notifications

Table 6.3: Notifications of IRPAgent

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	
notifyComments	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAlarmListRebuilt	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyPotentialFaultyAlarmList	See Alarm IRP (3GPP TS 32.111-2 [11])	

Note that these notifications are issued based on occurrences on the IRPAgent IOC and not on occurrences on other IOCs.

6.1.3.3 ManagedElement~~ManagedElement~~

6.1.3.3.1 Definition

This IOC represents telecommunications equipment or TMN entities within the telecommunications network that performs Managed Element (ME) functions, i.e. provides support and/or service to the subscriber.
An ME communicates with a manager (directly or indirectly) over one or more interfaces for the purpose of being monitored and/or controlled. MEs may or may not additionally perform element management functionality.
An ME contains equipment that may or may not be geographically distributed. An ME is often referred to as a "Network Element".

A ManagedElement~~ManagedElement~~ may be contained in either a SubNetwork~~SubNetwork~~ or in an MeContext~~MeContext~~ instance. A single ManagedElement~~ManagedElement~~ seen over the Itf-N may also exist stand-alone with no parent at all.

The ManagedElement ~~ManagedElement~~ IOC may be used to represent combined ME functionality (as indicated by the managedElementType attribute and the contained instances of different functional IOCs).

Single function ManagedElement~~ManagedElement~~ IOC instances will have a 1..1 containment relationship to a function IOC instance (in this context a function IOC instance is an instance of an IOC derived from the ManagedFunction~~ManagedFunction~~ IOC). Multiple function ManagedElement~~ManagedElement~~ instances will have a 1..N containment relationship to function IOC instances.

Note that for some specific functional IOCs a 1..N containment relationship is permitted. The specific functional entities will be identified in the NRMs that define subclasses of ManagedFunction.

6.1.3.3.2 Attributes

Table 6.4: Attributes of ManagedElement

Attribute Name	Support Qualifier	Read Qualifier	Write Qualifier
managedElementId	M	M	-
dnPrefix	M	M	-
managedElementType	M	M	-
userLabel	M	M	M
vendorName	M	M	-
userDefinedState	M	M	M
locationName	M	M	-
swVersion	M	M	-
managedBy	M	M	-

6.1.3.3.3 Attribute constraints

Attribute constrains for dnPrefix: The attribute dnPrefix shall be supported if an instance of ManagedElement~~ManagedElement~~ is the local root instance of the MIB. Otherwise the attribute shall be absent or carry no information.

6.1.3.3.4 Notifications

Table 6.5: Notifications of `ManagedElement`

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	
notifyComments	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAlarmListRebuilt	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyPotentialFaultyAlarmList	See Alarm IRP (3GPP TS 32.111-2 [11])	

6.1.3.4 ManagedFunction~~ManagedFunction~~

6.1.3.4.1 Definition

This IOC is provided for sub-classing only. It provides attribute(s) that are common to functional IOCs. Note that a Managed Element~~Managed Element~~ may contain several managed functions. The ManagedFunction ~~ManagedFunction~~ may be extended in the future if more common characteristics to functional objects are identified.

6.1.3.4.2 Attributes

Table 6.6: Attributes of `ManagedFunction`

Attribute Name	Support Qualifier	Read Qualifier	Write Qualifier
userLabel	M	M	M

6.1.3.5 ManagementNode~~ManagementNode~~

6.1.3.5.1 Definition

This IOC represents a telecommunications management system (EM) within the TMN that contains functionality for managing a number of Managed Elements~~Managed Elements~~ (MEs). The management system communicates with the MEs directly or indirectly over one or more interfaces for the purpose of monitoring and/or controlling these MEs.

This class has similar characteristics as the ManagedElement~~ManagedElement~~. The main difference between these two classes is that the ManagementNode~~ManagementNode~~ has a special association to the managed elements that it is responsible for managing.

6.1.3.5.2 Attributes

Table 6.7: Attributes of `ManagementNode`

Attribute Name	Support Qualifier	Read Qualifier	Write Qualifier
managementNodeId	M	M	-
userLabel	M	M	M
vendorName	M	M	-
userDefinedState	M	M	M
locationName	M	M	-
swVersion	M	M	-
managedElements	M	M	-

6.1.3.5.3 Notifications

Table 6.8: Notifications of `ManagementNode`

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	
notifyComments	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAlarmListRebuilt	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyPotentialFaultyAlarmList	See Alarm IRP (3GPP TS 32.111-2 [11])	

6.1.3.6 MeContext~~MeContext~~

6.1.3.6.1 Definition

This IOC is introduced for naming purposes. It may support creation of unique DNs in scenarios when some MEs have the same RDNs due to the fact that they have been manufacturer pre-configured.
If some MEs have the same RDNs (for the above mentioned reason) and they are contained in the same SubNetwork ~~SubNetwork~~ instance, some measure shall be taken in order to assure the global uniqueness of DNs for all IOC instances under those MEs. One way could be to set different DnPrefixes for those NEs, but that would require either that:

a) all LDNs or DNs are locally modified using the new DnPrefix for the upper portion of the DNs, or

b) a mapping (translation) of the old LDNs or DNs to the new DNs every time they are used externally, e.g. in alarm notifications.

As both the two alternatives above may involve unacceptable drawbacks (as the old RDNs for the MEs then would have to be changed or mapped to new values), using MeContext offers a new alternative to resolve the DN creation. Using MeContext~~MeContext~~ as part of the naming tree (and thus the DN) means that the DnPrefix, including a unique MeContex~~MeContex~~t for each ME, may be directly concatenated with the LDNs, without any need to change or map the existing ME RDNs to new values.

MeContext~~MeContext~~ have 0..N instances. It may exist even if no SubNetwork~~SubNetwork~~ exists. Every instance of MeContext ~~MeContext~~ contains exactly one ManagedElement~~ManagedElement~~ during steady-state operations.

6.1.3.6.2 Attributes

Table 6.9: Attributes of `MeContext`

Attribute Name	Support Qualifier	Read Qualifier	Write Qualifier
meContextId	M	M	-
dnPrefix	M	M	-

6.1.3.6.3 Attribute constraints

Attribute constrains for dnPrefix: The attribute dnPrefix shall be supported if an instance of MeContext ~~MeContext~~ is the local root instance of the MIB. Otherwise the attribute shall be absent or carry no information.

6.1.3.6.4 Notification

Table 6.10: Notifications of `MeContext`

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	
notifyComments	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAlarmListRebuilt	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyPotentialFaultyAlarmList	See Alarm IRP (3GPP TS 32.111-2 [11])	

6.1.3.7 SubNetwork~~SubNetwork~~

6.1.3.7.1 Definition

This IOC represents a set of managed entities as seen over the Itf-N.

There may be zero or more instances of a SubNetwork~~SubNetwork~~. It shall be present if either a ManagementNode~~ManagementNode~~ or multiple ManagedElements~~ManagedElement~~s are present (i.e. ManagementNode~~ManagementNode~~ and multiple ManagedElement~~ManagedElement~~ instances shall have SubNetwork~~SubNetwork~~ as parent).

The SubNetwork~~SubNetwork~~ instance not contained in any other instance of SubNetwork~~SubNetwork~~ is referred to as "the root SubNetwork instance".

6.1.3.7.2 Attributes

Table 6.11: Attributes of `SubNetwork`

Attribute Name	Support Qualifier	Read Qualifier	Write Qualifier
subNetworkId	M	M	-
dnPrefix	M	M	-
userLabel	M	M	M
userDefinedNetworkType	M	M	-
setOfMcc	M	M	-

6.1.3.7.3 Attribute constraints

Attribute constrains for dnPrefix: The attribute dnPrefix shall be supported if an instance of SubNetwork is the local root instance of the MIB. Otherwise the attribute shall be absent or carry no information.

Attribute constrains for setOfMcc: If there may be more than one MCC value in the SubNetwork instance, the attribute setOfMcc is mandatory. Otherwise it is optional.

6.1.3.7.4 Notifications

Table 6.12: Notifications of SubNetwork

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	
notifyComments	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAlarmListRebuilt	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyPotentialFaultyAlarmList	See Alarm IRP (3GPP TS 32.111-2 [11])	

6.1.3.8 Top~~Top~~

6.1.3.8.1 Definition

This IOC is introduced for generalisation purposes. All information object classes defined in all TS that claim to be conformant to 32.102[2] shall inherit from Top~~Top~~.

6.1.3.8.2 Attributes

Table 6.13: Attributes of Top

Attribute Name	Support Qualifier	Read Qualifier	Write Qualifier
objectClass	M	M	-
objectInstance	M	M	-

6.1.3.9 ~~Class~~ VsDataContainer~~VsDataContainer~~

6.1.3.9.1 Definition

The 'VsDataContainer~~VsDataContainer~~' managed object is a container for vendor specific data. The number of instances of the 'VsDataContainer~~VsDataContainer~~' can differ from vendor to vendor. This IOC shall only be used by the Bulk CM IRP for the UTRAN, GERAN and CN NRMs.

6.1.3.9.2 Attribute

Table 6.14: Attributes of VsDataContainer

Attribute Name	Support Qualifier	Read Qualifier	Write Qualifier
vsDataContainerId	M	M	-
vsDataType	M	M	-
vsData	M	M	O
vsDataFormatVersion	M	M	-

6.1.3.10 Link

6.1.3.10.1 Definition

This IOC represents the relationship between 2 instances. This IOC cannot be instantiated. It is defined for sub-classing purposes.
It is derived from managedFunction

6.1.3.10.2 Attributes

Table 6.15: Attributes of Link

Attribute Name	Support Qualifier	Read Qualifier	Write Qualifier
linkId	M	M	-
userLabel ~~(see note1)~~	M	M	M
aEnd	M	M	-
zEnd	M	M	-
linkType	O	M	-
protocolName	O	M	-
protocolVersion	O	M	-
~~Note1: this attribute is inherited from **ManagedFunction**~~			

6.1.3.10.2 Notifications

Table 6.16: Notifications of Link

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	
notifyComments	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyAlarmListRebuilt	See Alarm IRP (3GPP TS 32.111-2 [11])	
notifyPotentialFaultyAlarmList	See Alarm IRP (3GPP TS 32.111-2 [11])	

6.1.4 Information relationship definitions

6.1.4.1 ManagementScope~~ManagementScope~~ **(M)**

6.1.4.1.1 Definition

This association is used to represent relationships between one or more MEs and the ManagementNode~~ManagementNode~~ that is responsible for managing the MEs. It has two roles, named Manager and Subordinate. The role 'Manager' models the fact that a ManagementNode~~ManagementNode~~ is responsible for managing zero or more MEs, and the role Subordinate models the fact that an ME is managed by zero or one ManagementNode~~ManagementNode~~. Each role is in the IOC definition mapped to a reference attribute with the same name.

6.1.4.1.2 Roles

The roles involved in the relation ManagementScope are listed in this table.

Table 6.~~15~~17: Roles of the relation ManagementScope

Name	Definition
Manager	This role represents the ManagementNode's~~ManagementNode's~~ capability to identify the set of related ManagedElements~~ManagedElements~~. This role is modelled by a reference attribute named managedElements. ManagementNode.managedElements shall carry the set of ManagedElement~~ManagedElement~~ DN(s).
Subordinate	This role represents the ManagedElement's capability to identify the set of related managementNode(s). This role is modelled by a reference attribute named managedBy. ManagedElement.managedBy shall carry the set of ManagementNode DN(s).

6.1.4.1.3 Constraints

There is no constraint for this relationship.

6.1.5 Information attribute definitions

6.1.5.1 Definitions and legal values

Table 6.16 defines the attributes that are present in several information object classes of the present document.

Table 6.~~16~~18: Attributes

Attribute Name	Definition	Legal Values
aEnd	The value of this attribute shall be the Distinguished Name of the alphabetically first instance in the Link IOC to which this link/relation is modeled. As an example, with Link_As_Slf, aEnd would contain the Distinguished Name of the As instance, and the Zend would contain the Distinguished Name of Slf instance. Note that if the Link IOC names are the same (e.g., Link_Bgcf_Bgcf), no ordering can be implied.	Single DN string as defined in TS 32.300 [13]
dnPrefix	It carries the DN Prefix information as defined in Annex C of 32.300 [13] or no information.	
linkId	An attribute whose 'name+value' can be used as an RDN when naming an instance of the link object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	Values to be conformant with TS 32.300 [13]
managedElementId	An attribute whose 'name+value' can be used as an RDN when naming an instance of the ManagedElement object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
managedElementType	The type of managed element. It is a multi-valued attribute with one or more unique elements. Thus, it may represent one ME functionality or a combination of more than one functionality. The actual syntax and encoding of this attribute is Solution Set specific.	The legal values of this attribute are the names of the IOC(s) that are (a) derived/subclassed from ManagedFunction and (b) directly name-contained by ManagedElement IOC (on the first level below ManagedElement), but with the string "Function" excluded. If a ManagedElement contains multiple instances of a ManagedFunction this attribute will not contain repeated values. The capitalisation (usage of upper/lower case) of characters in this attribute is insignificant. Thus, the IRPManager should be case insensitive when reading these values. Two examples of legal values are: • NodeB; • HLR,VLR.
irpAgentId	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.	
iRPId	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.	
linkType	This attribute defines the type of the link.	Signalling, Bearer, OAM&P, Other or multiple combinations of the above types.
locationName	The physical location of this entity (e.g. an address).	

Attribute Name	Definition	Legal Values
managedElements	Models the role 'Manager' – see subclause 6.1.4.1.2. This attribute contains a list of the DN(s) of the related ManagedElement instance(s).	
managementNodeId	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.	
managedBy	Models the role 'Subordinate' – see subclause 6.1.4.1.2. This attribute contains a list of the DN(s) of the related ManagementNode instance(s).	
meContextId	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.	
objectClass	An attribute which captures the name of the class from which the object instance is an occurrence of.	
objectInstance	An information which captures the Distinguished Name of any object.	
protocolName	Protocol Name	
protocolVersion	Protocol version	
setOfMcc	Set of Mobile Country Code (MCC). The MCC uniquely identifies the country of domicile of the mobile subscriber. MCC is part of the IMSI (Ref. 3GPP TS 23.003). This list contains all the MCC values in subordinate object instances to this SubNetwork instance. Every unique value of MCC shall only appear once in the list.	
subNetworkId	An attribute whose 'name+value' can be used as an RDN when naming an instance of the SubNetwork object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
swVersion	The software version of the ManagementNode or ManagedElement (this is used for determining which version of the vendor specific information is valid for the ManagementNode or ManagedElement).	
systemDN	The Distinguished Name (DN) of IRPAgent. Defined in 3GPP TS 32.300.	
userDefinedNetworkType	Textual information regarding the type of network, e.g. UTRAN.	
userDefinedState	An operator defined state for operator specific usage. (See also Note below)	
userLabel	A user-friendly (and user assignable) name of this object.	
vendorName	The name of the vendor.	
vsData	Vendor specific attributes of the type vsDataType. The attribute definitions including constraints (value ranges, data types, etc.) are specified in a vendor specific data format file.	
vsDataContainerId	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.	
vsDataFormatVersion	Name of the data format file, including version.	
vsDataType	Type of vendor specific data contained by this instance, e.g. relation specific algorithm parameters, cell specific parameters for power control or re-selection or a timer. The type itself is also vendor specific.	
zEnd	The value of this attribute shall be the Distinguished Name of the alphabetically second instance in the Link IOC to which this link/relation is modeled. As an example, with Link_As_Slf, aEnd would contain the Distinguished Name of the As instance, and the Zend would contain the Distinguished Name of Slf instance. Note that if the Link IOC names are the same (e.g., Link_Bgcf_Bgcf), no ordering can be implied.	Single DN string as defined in TS 32.300 [13]

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
Sep 2001	S_13	SP-010479	001	--	Add the notification notifyComments in all MOCs that support alarms and correct the list of allowed members of the attribute managedElementType of the MOC managedElement	4.0.0	4.1.0
Sep 2001	S_13	SP-010479	002	--	Correction of Generic NRM Containment/Naming and Association diagram	4.0.0	4.1.0
Sep 2001	S_13	SP-010479	003	--	Correct description of swVersion attribute	4.0.0	4.1.0
Mar 2002	S_15	SP-020020	004	--	Addition of managedElementType value for GSM Radio Access Network support	4.1.0	4.2.0
Jun 2002	S_16	SP-020299	005	--	Remove R99-inherited restriction of self-containment for MOC SubNetwork	4.2.0	4.3.0
Sep 2002	S_17	SP-020488	006	--	Upgrade to Rel-5 (Add new IS method, MOC name convention)	4.3.0	5.0.0
Jun 2003	S_20	SP-030280	008	--	Correction of Notifications for IOCs	5.0.0	5.1.0
Dec 2003	S_22	SP-030643	010	--	Add Missing VsDataContainer for ManagedFunction & ManagedElement and Other IOCs (Version 2)	5.1.0	5.2.0
Dec 2003	S_22	SP-030644	011	--	Correction of UML diagram and other corrections	5.1.0	5.2.0
Dec 2003	S_22	SP-030648	012	--	Add SetofMcc attribute in Generic NRM IOCs for NRM alignment	5.2.0	6.0.0
Mar 2004	S_23	SP-040128	014	--	Addition of missing attributes for the managementScope association	6.0.0	6.1.0
Jun 2004	S_24	SP-040249	016	--	Add missing attribute constraints for dnPrefix	6.1.0	6.2.0
Jun 2004	S_24	SP-040251	018	--	Correction of legal values for managedElementType attribute	6.1.0	6.2.0
Dec 2004	S_26	SP-040808	020	--	Correct the write qualification for VsDataContainer.vsData	6.2.0	6.3.0
Dec 2004	S_26	SP-040808	021	--	Correction of modelling of Media GateWay (MGW)	6.2.0	6.3.0

3GPP TSG-SA5 (Telecom Management) ***Tdoc ⌘S5-058168***
Meeting #41, Lisbon, PORTUGAL, 24 - 28 January 2005

CR-Form-v7.1

CHANGE REQUEST

⌘ **32.625** **CR** **014** ⌘ **rev** **-** ⌘ Current version: **6.3.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☒

Title:	⌘	Add genericNRM.xsd for new IMS Links
Source:	⌘	SA5 (mohanr@lucent.com)
Work item code:	⌘	OAM-NIM
Date:	⌘	28/01/2005
Category:	⌘	**B**
Release:	⌘	Rel-6

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:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	Addition of definitions for changes made in coreNRM.xsd
Summary of change:	⌘	• Added type definitions for use in coreNRM.
Consequences if not approved:	⌘	---
Clauses affected:	⌘	1 , Annex A, Annex B

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘

Change in Sec 1

1 Scope

The present document provides the NRM-specific part related to the Generic Network Resources IRP NRM [1] of the XML file format definition for the Bulk Configuration Management IRP IS [2].

The main part of this XML file format definition is provided by 3GPP TS 32.615 [3].

Bulk CM XML file formats are based on XML [4], XML Schema [5] [6] [7] and XML Namespace [8] standards.

This File Format Definition specification is related to 3GPP TS 32.622 (V5.64.X).

Change in Clause Sec 1

Change in Clause Annex A

Annex A (normative): Configuration data file NRM-specific XML schema (file name "genericNrm.xsd")

The following XML schema genericNrm.xsd is the NRM-specific schema for the Generic Network Resources IRP NRM defined in 3GPP TS 32.622 [1]:

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

<!--
  3GPP TS 32.625 Generic Network Resources IRP
  Bulk CM Configuration data file NRM-specific XML schema
  genericNrm.xsd
-->

<schema
  targetNamespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
  elementFormDefault="qualified"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xn=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
>

  <!-- Base XML type for all NRM class associated XML elements -->

  <complexType name="NrmClass">
    <attribute name="id" type="string" use="required"/>
    <attribute name="modifier" use="optional">
      <simpleType>
        <restriction base="string">
          <enumeration value="create"/>
          <enumeration value="delete"/>
          <enumeration value="update"/>
        </restriction>
      </simpleType>
    </attribute>
  </complexType>


<simpleType name="DN">
   <restriction base="string">
      <maxLength value="400"/>
```

```
   </restriction>
</simpleType>

<simpleType name="DNList">
   <list itemType="xn:DN"/>
</simpleType>

<simpleType name="LinkTypeList">
   <list itemType="xn:LinkType"/>
</simpleType>

<simpleType name="LinkType">
   <restriction base="string">
      <enumeration value="Signaling"/>
      <enumeration value="Bearer"/>
      <enumeration value="OAMAndP"/>
      <enumeration value="Other"/>
   </restriction>
</simpleType>
```

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

  <element name="SubNetwork">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="userLabel" minOccurs="0"/>
                  <element name="userDefinedNetworkType" minOccurs="0"/>
                  <element name="setOfMcc" minOccurs="0"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="xn:SubNetwork"/>
              <element ref="xn:ManagedElement"/>
              <element ref="xn:MeContext"/>
              <element ref="xn:ManagementNode"/>
              <element ref="xn:IRPAgent"/>
              <element ref="xn:SubNetworkOptionallyContainedNrmClass"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

  <element name="ManagedElement">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="managedElementType" minOccurs="0"/>
                  <element name="userLabel" minOccurs="0"/>
                  <element name="vendorName" minOccurs="0"/>
                  <element name="userDefinedState" minOccurs="0"/>
                  <element name="locationName" minOccurs="0"/>
                  <element name="swVersion" minOccurs="0"/>
                  <element name="managedBy" minOccurs="0"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="xn:IRPAgent"/>
              <element ref="xn:ManagedElementOptionallyContainedNrmClass"/>
              <element ref="xn:VsDataContainer"/>
            </choice>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
```

```
</element>

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

<element name="ManagementNode">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="userLabel" minOccurs="0"/>
                <element name="vendorName" minOccurs="0"/>
                <element name="userDefinedState" minOccurs="0"/>
                <element name="locationName" minOccurs="0"/>
                <element name="managedElements" minOccurs="0"/>
                <element name="swVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:IRPAgent"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="IRPAgent">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="systemDN" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:NotificationIRP"/>
            <element ref="xn:AlarmIRP"/>
            <element ref="xn:BasicCmIRP"/>
            <element ref="xn:BulkCmIRP"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="NotificationIRP">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
```

```
              <all>
                <element name="irpVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="AlarmIRP">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="irpVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="BasicCmIRP">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="irpVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="BulkCmIRP">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="irpVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="VsDataContainer">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="vsDataType" minOccurs="0"/>
                <element name="vsDataFormatVersion" minOccurs="0"/>
                <element ref="xn:vsData" minOccurs="0"/>
              </all>
            </complexType>
```

```
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<!--
  VsDataContainer NRM class vsData attribute associated empty XML element
-->

<element name="vsData">
  <complexType/>
</element>
<!--
  Abstract head XML element for all XML elements associated to further
  NRM classes optionally contained under SubNetwork NRM class
-->

<element
  name="SubNetworkOptionallyContainedNrmClass"
  type="xn:NrmClass"
  abstract="true"
/>

<!--
  Abstract head XML element for all XML elements associated to further
  NRM classes optionally contained under ManagedElement NRM class
-->

<element
  name="ManagedElementOptionallyContainedNrmClass"
  type="xn:NrmClass"
  abstract="true"
/>

</schema>
```

End of Change in Annex A

Change in Annex B

Annex B (informative): XML schema electronic files

The electronic files corresponding to the normative XML schemas defined in the present document are available in native form in the following archive:

http://www.3gpp.org/ftp/specs/archive/32_series/32.625/schema/32625-6430-XMLSchema.zip

End of Change in Annex B
End of Document

Annex C (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Dec 2004	S_26	SP-040808	013	--	Correct attribute for the managementScope association - Align with IS in 32.622	6.2.0	6.3.0

3GPP TSG-SA5 (Telecom Management) ***Tdoc ⌘S5-058170***
Meeting #41, Lisbon, PORTUGAL, 24 - 28 January 2005

CR-Form-v7.1

CHANGE REQUEST

⌘ **32.625** **CR** **015** ⌘ **rev** **-** ⌘ Current version: **5.4.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☒

Title:	⌘	Error corrections to genericNRM.xsd
Source:	⌘	SA5 (mohanr@lucent.com, XiongKangjian@zte.com.cn)
Work item code:	⌘	OAM-NIM
Date:	⌘	28/01/2005
Category:	⌘	**F**
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:

Ph2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*
Rel-7	*(Release 7)*

Reason for change:	⌘	Errors have been discovered in the declaration of element vsData and in one of the attributes of ManagementNode.
Summary of change:	⌘	• Made small formatting changes. • Corrected the definition of `vsData`.
Consequences if not approved:	⌘	The spec will not reflect the contents of IS and the XML styleguide.

Clauses affected:	⌘	Annex A, Annex B

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	Related Rel-6 CR in S5-058171.

Change in Clause Annex A

Annex A (normative): Configuration data file NRM-specific XML schema (file name "genericNrm.xsd")

The following XML schema genericNrm.xsd is the NRM-specific schema for the Generic Network Resources IRP NRM defined in 3GPP TS 32.622 [1]:

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

<!--
  3GPP TS 32.625 Generic Network Resources IRP
  Bulk CM Configuration data file NRM-specific XML schema
  genericNrm.xsd
-->

<schema targetNamespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
  elementFormDefault="qualified"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xn="http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
>

<schema
  targetNamespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
  elementFormDefault="qualified"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xn=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
>

  <!-- Base XML type for all NRM class associated XML elements -->

  <complexType name="NrmClass">
    <attribute name="id" type="string" use="required"/>
    <attribute name="modifier" use="optional">
      <simpleType>
        <restriction base="string">
          <enumeration value="create"/>
          <enumeration value="delete"/>
          <enumeration value="update"/>
        </restriction>
      </simpleType>
    </attribute>
  </complexType>

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

  <element name="SubNetwork">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="userLabel" minOccurs="0"/>
                  <element name="userDefinedNetworkType" minOccurs="0"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="xn:SubNetwork"/>
              <element ref="xn:ManagedElement"/>
              <element ref="xn:MeContext"/>
              <element ref="xn:ManagementNode"/>
              <element ref="xn:IRPAgent"/>
              <element ref="xn:SubNetworkOptionallyContainedNrmClass"/>
```

```
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="ManagedElement">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="managedElementType" minOccurs="0"/>
                <element name="userLabel" minOccurs="0"/>
                <element name="vendorName" minOccurs="0"/>
                <element name="userDefinedState" minOccurs="0"/>
                <element name="locationName" minOccurs="0"/>
                <element name="swVersion" minOccurs="0"/>
                <element name="managedBy" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:IRPAgent"/>
            <element ref="xn:ManagedElementOptionallyContainedNrmClass"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

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

<element name="ManagementNode">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="userLabel" minOccurs="0"/>
                <element name="vendorName" minOccurs="0"/>
                <element name="userDefinedState" minOccurs="0"/>
                <element name="locationName" minOccurs="0"/>
                <element name="managedElements" minOccurs="0"/>
                <element name="swVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:IRPAgent"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
```

```
    </complexContent>
  </complexType>
</element>

<element name="IRPAgent">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="systemDN" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:NotificationIRP"/>
            <element ref="xn:AlarmIRP"/>
            <element ref="xn:BasicCmIRP"/>
            <element ref="xn:BulkCmIRP"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="NotificationIRP">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="irpVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="AlarmIRP">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="irpVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="BasicCmIRP">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="irpVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
```

```
      </complexContent>
    </complexType>
  </element>

  <element name="BulkCmIRP">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="irpVersion" minOccurs="0"/>
                </all>
              </complexType>
            </element>
          </sequence>
        </extension>
      </complexContent>
    </complexType>
  </element>

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

  <!--
    VsDataContainer NRM class vsData attribute associated empty XML element
  -->

  <complexType name="vsData"/>
  <element name="vsData" type="xn:vsData"/>
  <element name="vsData">
    <complexType/>
  </element>

  <!--
    Abstract head XML element for all XML elements associated to further
    NRM classes optionally contained under SubNetwork NRM class
  -->

  <element
    name="SubNetworkOptionallyContainedNrmClass"
    type="xn:NrmClass"
    abstract="true"
  />

  <!--
    Abstract head XML element for all XML elements associated to further
    NRM classes optionally contained under ManagedElement NRM class
  -->

  <element
    name="ManagedElementOptionallyContainedNrmClass"
    type="xn:NrmClass"
    abstract="true"
  />

</schema>
```

End of Change in Annex A

Change in Annex B

Annex B (informative): XML schema electronic files

The electronic files corresponding to the normative XML schemas defined in the present document are available in native form in the following archive:

http://www.3gpp.org/ftp/specs/archive/32_series/32.625/schema/32625-5540-XMLSchema.zip

End of Change in Annex B
End of Document

Annex C (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Jun 2004	S_24	SP-040251	010	--	Correction of legal values for managedElementType attribute	5.2.0	5.3.0
Dec 2004	S_26	SP-040808	012	--	Correct attribute for the managementScope association - Align with IS in 32.622	5.3.0	5.4.0

3GPP TSG-SA5 (Telecom Management) ***Tdoc ⌘S5-058171***
Meeting #41, Lisbon, PORTUGAL, 24 - 28 January 2005

CR-Form-v7.1

CHANGE REQUEST

⌘ **32.625** **CR** **016** ⌘ **rev** **-** ⌘ Current version: **6.3.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☒

Title:	⌘	Error corrections to genericNRM.xsd
Source:	⌘	SA5 (mohanr@lucent.com, XiongKangjian@zte.com.cn)
Work item code:	⌘	OAM-NIM
Date:	⌘	28/01/2005
Category:	⌘	**A**
Release:	⌘	Rel-6

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:
Ph2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)
Rel-7 (Release 7)

Reason for change:	⌘	Errors have been discovered in the declaration of element vsData and in one of the attributes of ManagementNode.
Summary of change:	⌘	• Made small formatting changes. • Corrected the definition of `vsData`.
Consequences if not approved:	⌘	The spec will not reflect the contents of the XML styleguide.

Clauses affected:	⌘	Annex A, Annex B

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

Change in Clause Annex A

Annex A (normative): Configuration data file NRM-specific XML schema (file name "genericNrm.xsd")

The following XML schema genericNrm.xsd is the NRM-specific schema for the Generic Network Resources IRP NRM defined in 3GPP TS 32.622 [1]:

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

<!--
  3GPP TS 32.625 Generic Network Resources IRP
  Bulk CM Configuration data file NRM-specific XML schema
  genericNrm.xsd
-->

<schema
  targetNamespace=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
  elementFormDefault="qualified"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xn=
"http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
>

<schema targetNamespace="http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
  elementFormDefault="qualified"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xn="http://www.3gpp.org/ftp/specs/archive/32_series/32.625#genericNrm"
>

  <!-- Base XML type for all NRM class associated XML elements -->

  <complexType name="NrmClass">
    <attribute name="id" type="string" use="required"/>
    <attribute name="modifier" use="optional">
      <simpleType>
        <restriction base="string">
          <enumeration value="create"/>
          <enumeration value="delete"/>
          <enumeration value="update"/>
        </restriction>
      </simpleType>
    </attribute>
  </complexType>

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

  <element name="SubNetwork">
    <complexType>
      <complexContent>
        <extension base="xn:NrmClass">
          <sequence>
            <element name="attributes" minOccurs="0">
              <complexType>
                <all>
                  <element name="userLabel" minOccurs="0"/>
                  <element name="userDefinedNetworkType" minOccurs="0"/>
                  <element name="setOfMcc" minOccurs="0"/>
                </all>
              </complexType>
            </element>
            <choice minOccurs="0" maxOccurs="unbounded">
              <element ref="xn:SubNetwork"/>
              <element ref="xn:ManagedElement"/>
              <element ref="xn:MeContext"/>
              <element ref="xn:ManagementNode"/>
```

```
            <element ref="xn:IRPAgent"/>
            <element ref="xn:SubNetworkOptionallyContainedNrmClass"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="ManagedElement">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="managedElementType" minOccurs="0"/>
                <element name="userLabel" minOccurs="0"/>
                <element name="vendorName" minOccurs="0"/>
                <element name="userDefinedState" minOccurs="0"/>
                <element name="locationName" minOccurs="0"/>
                <element name="swVersion" minOccurs="0"/>
                <element name="managedBy" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:IRPAgent"/>
            <element ref="xn:ManagedElementOptionallyContainedNrmClass"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

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

<element name="ManagementNode">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="userLabel" minOccurs="0"/>
                <element name="vendorName" minOccurs="0"/>
                <element name="userDefinedState" minOccurs="0"/>
                <element name="locationName" minOccurs="0"/>
                <element name="manages" minOccurs="0"/>
                <element name="swVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:IRPAgent"/>
            <element ref="xn:VsDataContainer"/>
          </choice>
```

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

<element name="IRPAgent">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="systemDN" minOccurs="0"/>
              </all>
            </complexType>
          </element>
          <choice minOccurs="0" maxOccurs="unbounded">
            <element ref="xn:NotificationIRP"/>
            <element ref="xn:AlarmIRP"/>
            <element ref="xn:BasicCmIRP"/>
            <element ref="xn:BulkCmIRP"/>
          </choice>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="NotificationIRP">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="irpVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="AlarmIRP">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="irpVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

<element name="BasicCmIRP">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="irpVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
```

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

<element name="BulkCmIRP">
  <complexType>
    <complexContent>
      <extension base="xn:NrmClass">
        <sequence>
          <element name="attributes" minOccurs="0">
            <complexType>
              <all>
                <element name="irpVersion" minOccurs="0"/>
              </all>
            </complexType>
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
</element>

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

<!--
  VsDataContainer NRM class vsData attribute associated empty XML element
-->

<element name="vsData">
  <complexType/>
</element>
<complexType name="vsData"/>
<element name="vsData" type="xn:vsData"/>

<!--
  Abstract head XML element for all XML elements associated to further
  NRM classes optionally contained under SubNetwork NRM class
-->

<element
  name="SubNetworkOptionallyContainedNrmClass"
  type="xn:NrmClass"
  abstract="true"
/>

<!--
  Abstract head XML element for all XML elements associated to further
  NRM classes optionally contained under ManagedElement NRM class
-->

<element
  name="ManagedElementOptionallyContainedNrmClass"
  type="xn:NrmClass"
  abstract="true"
/>
```

```
</schema>
```

End of Change in Annex A

Change in Annex B

Annex B (informative): XML schema electronic files

The electronic files corresponding to the normative XML schemas defined in the present document are available in native form in the following archive:

http://www.3gpp.org/ftp/specs/archive/32_series/32.625/schema/32625-6430-XMLSchema.zip

End of Change in Annex B
End of Document

Annex C (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Jun 2004	S_24	SP-040251	011	--	Correction of legal values for managedElementType attribute	6.1.0	6.2.0
Dec 2004	S_26	SP-040808	013	--	Correct attribute for the managementScope association - Align with IS in 32.622	6.2.0	6.3.0