Source:	**SA5 (Telecom Management)**
Title:	**Rel-5 CRs 32.653 (GERAN network resources Integration Reference Point (IRP): CORBA solution set) - Upgrade to Rel-5**
Document for:	**Approval**
Agenda Item:	**7.5.3**

Doc-1st-	Spec	CR	Rev	Phase	Subject	Cat	Version-	Doc-2nd-	Workitem
SP-020497	32.653	003	-	Rel-5	**Upgrade to Rel-5**	C	4.1.0	S5-026710	OAM-NIM

CR-Form-v7

CHANGE REQUEST

| ⌘ | **32.653** CR **003** | ⌘ **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: UICC apps⌘ ☐   ME ☐   Radio Access Network **X**   Core Network ☐

Title: ⌘	Upgrade to Rel-5	
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)*
Rel-6   *(Release 6)*

Reason for change: ⌘	Update the GERAN NRM CORBA SS (32.653) for Release 4 to meet Release 5 documentation conventions, terminlogy, and methodology
Summary of change: ⌘	• Changed references to IS MOC to IS IOC • Removed Release 4 references
Consequences if not approved: ⌘	The GERAN CORBA solution set will not be consistent with Rel-5 document concentions and terminology. The GERAN NRM CORBA Solution Set (32.653) will be inconsistent with the Rel-5 GERAN NRM (32.652)

Clauses affected: ⌘	Introduction, Scope, Definitions and Abbreviations, 4, 5, and 6

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

Other comments: ⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary: …

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 Nes and NRs, and they may be initiated by the operator or functions in the Oss or Nes.

CM actions may be requested as part of an implementation programme (e.g. additions and deletions), as part of an optimisation programme (e.g. modifications), and to maintain the overall Quality of Service. The CM actions are initiated either as a single action on a Network Element (NE) of the 3G network or as part of a complex procedure involving actions on many Nes.

The Itf-N interface for Configuration Management is built up by a number of Integration Reference Points (IRPs) and a related Name Convention, which realise the functional capabilities over this interface. The basic structure of the IRPs is defined in 3GPP TS 32.101 [1] and 3GPP TS 32.102 [2].For CM, a number of IRPs (and the Name Convention) are defined herein, used by this as well as other technical specifications for telecom management produced by 3GPP.

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 Model (NRM) parts of R99 Basic CM IRP (Generic, Core Network and UTRAN NRM). These IRPs are named "Network Resources IRP".

Further, the Notification IRP (in Release 1999: 32.106-1 to -4) and the Name convention for Managed Objects (in Release 1999: 32.106-8) have been moved to a separate number series used for specifications common between several management areas (e.g. CM, FM, PM).

Finally, in addition to the restructuring mentioned above, the need to define some new functionality and IRPs for CM compared to Release 1999, has also been identified. Firstly, a new Bulk CM IRP, and secondly an a GERAN Network Resources IRP, have been created. Thirdly, the Generic, UTRAN and GERAN Network Resources IRPs have been extended with support for GSM-UMTS Inter-system handover (ISH), and the 32.600 (Concept and High-level Requirements) has been modified to cover the high-level Bulk CM and ISH requirements.

Table 1: Mapping between Release '99 and the new specification numbering scheme

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 *GERAN Network Resources IRP: CORBA Solution Set* is to define the mapping of the IRP information model (see 3GPP TS 32.652 [4]) to the protocol specific details necessary for implementation of this IRP in a CORBA/IDL environment.

This Solution Set specification is related to 3GPP TS 32.652 V5.0.X.

3 Definitions and abbreviations

3.2 Definitions

For terms and definitions refer to TS 32.101 [1], TS 32.102 [2], TS 32.600 [3] and TS 32.652 [4].

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
IOC	Information Object Class
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 GERAN Network Resources IRP is specified in 3GPP TS 32.652[4]. This clause specifies features that are specific to the CORBA SS.

4.1 Notifications

Notifications are sent according to the Notification IRP: CORBA SS (see 3GPP TS 32.303 [9]).

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 GERAN NRM Managed Object Class (~~MOC~~IOC) mapping

5.2.1 ~~MOC~~ IOC `BssFunction`

Table 2: Mapping from NRM ~~MOC~~ IOC `BssFunction` attributes to SS equivalent MOC BssFunction attributes

~~NRM Attributes of MOC BssFunction in 3GPP TS 32.652 [4]~~	~~SS Attributes~~	~~SS Type~~	~~Qualifier~~
~~BssFunctionId~~	~~bssFunctionId~~	~~string~~	~~Read Only, M~~
~~UserLabel~~	~~userLabel~~	~~string~~	~~Read Write, M~~

NRM Attributes of IOC `BssFunction` in 3GPP TS 32.652 [4]	SS Attributes	SS Type	Support Qualifier	Read	Write
bssFunctionId	bssFunctionId	string	M	M	-
userLabel	userLabel	string	M	M	M

5.2.2 ~~MOC~~ IOC `BtsSiteMgr`

Table 3: Mapping from NRM ~~MOC~~ IOC `BtsSiteMgr` attributes to SS equivalent MOC `BtsSiteMgr` attributes

~~NRM Attributes of MOC BtsSiteMgr in 3GPP TS 32.652 [4]~~	~~SS Attributes~~	~~SS Type~~	~~Qualifier~~
~~BtsSiteMgrId~~	~~btsSiteMgrId~~	~~string~~	~~Read Only, M~~
~~UserLabel~~	~~userLabel~~	~~string~~	~~Read Write, M~~
~~Latitude~~	~~latitude~~	~~long~~	~~Read Write, O~~
~~Longitude~~	~~longitude~~	~~long~~	~~Read Write, O~~

NRM Attributes of IOC `BtsSiteMgr` in 3GPP TS 32.652 [4]	SS Attributes	SS Type	Support Qualifier	Read	Write
btsSiteMgrId	btsSiteMgrId	string	M	M	-
userLabel	userLabel	string	M	M	M
latitude	latitude	long	O	M	M
longitude	longitude	long	O	M	M

5.2.3 ~~MOC~~ IOC `GsmCell`

Table 4: Mapping from NRM ~~MOC~~ IOC `GsmCell` attributes to SS equivalent MOC `GsmCell` attributes

~~NRM Attributes of MOC GsmCell in 3GPP TS 32.652 [4]~~	~~SS Attributes~~	~~SS Type~~	~~Qualifier~~
~~GsmCellId~~	~~gsmCellId~~	~~string~~	~~Read Only, M~~
~~userLabel~~	~~userLabel~~	~~string~~	~~Read Write, M~~
~~cellIdentity~~	~~cellIdentity~~	~~long~~	~~Read Write, M~~
~~cellAllocation~~	~~cellAllocation~~	~~GenericNRIRPSystem:: AttributesTypes::LongSet~~	~~Read Write, M~~
~~ncc~~	~~ncc~~	~~long~~	~~Read Write, M~~
~~bcc~~	~~bcc~~	~~long~~	~~Read Write, M~~
~~lac~~	~~lac~~	~~long~~	~~Read Write, M~~
~~mcc~~	~~mcc~~	~~long~~	~~Read Write, M~~
~~mnc~~	~~mnc~~	~~long~~	~~Read Write, M~~
~~rac~~	~~rac~~	~~long~~	~~Read Write, O~~
~~racc~~	~~racc~~	~~long~~	~~Read Write, O~~
~~tsc~~	~~tsc~~	~~long~~	~~Read Write, M~~
~~rxLevAccessMin~~	~~rxLevAccessMin~~	~~long~~	~~Read Write, M~~
~~msTxPwrMaxCCH~~	~~msTxPwrMaxCCH~~	~~long~~	~~Read Write, M~~
~~hoppingSequenceNumber~~	~~hoppingSequenceNumber~~	~~long~~	~~Read Write, M~~
~~plmnPermitted~~	~~plmnPermitted~~	~~long~~	~~Read Write, M~~

NRM Attributes of IOC GsmCell in 3GPP TS 32.652 [4]	SS Attributes	SS Type	Support Qualifier	Read	Write
gsmCellId	gsmCellId	string	M	M	-
userLabel	userLabel	string	M	M	M
cellIdentity	cellIdentity	long	M	M	M
cellAllocation	cellAllocation	GenericNRIRPSystem::AttributesTypes::LongSet	M	M	M
ncc	ncc	long	M	M	M
bcc	bcc	long	M	M	M
lac	lac	long	M	M	M
mcc	mcc	long	M	M	M
mnc	mnc	long	M	M	M
rac	rac	long	O	M	M
racc	racc	long	O	M	M
tsc	tsc	long	M	M	M
rxLevAccessMin	rxLevAccessMin	long	M	M	M
msTxPwrMaxCCH	msTxPwrMaxCCH	long	M	M	M
hoppingSequenceNumber	hoppingSequenceNumber	long	M	M	M
plmnPermitted	plmnPermitted	long	M	M	M

5.2.4 ~~MOC~~ IOC `GsmRelation`

Table 5: Mapping from NRM ~~MOC~~ IOC `GsmRelation` attributes to SS equivalent MOC `GsmRelation` attributes

~~NRM Attributes of MOC GsmRelation in 3GPP TS 32.652 [4]~~	~~SS Attributes~~	~~SS Type~~	~~Qualifier~~
~~GsmRelationId~~	~~gsmRelationId~~	~~string~~	~~Read Only, M~~
~~RelationType~~	~~relationType~~	~~string~~	~~Read Write, M~~
~~AdjacentCell~~	~~adjacentCell~~	~~string~~	~~Read Write, M~~
~~BcchFrequency~~	~~bcchFrequency~~	~~long~~	~~Read Only, O~~
~~Ncc~~	~~ncc~~	~~long~~	~~Read Only, O~~
~~Bcc~~	~~bcc~~	~~long~~	~~Read Only, O~~
~~Lac~~	~~lac~~	~~long~~	~~Read Only, O~~

NRM Attributes of IOC `GsmRelation` in 3GPP TS 32.652 [4]	SS Attributes	SS Type	Support Qualifier	Read	Write
gsmRelationId	gsmRelationId	string	M	M	-
relationType	relationType	string	M	M	M
adjacentCell	adjacentCell	string	M	M	M
bcchFrequency	bcchFrequency	long	O	M	-
ncc	ncc	long	O	M	-
bcc	bcc	long	O	M	-
lac	lac	long	O	M	-

5.2.5 ~~MOC~~ IOC `ExternalGsmCell`

Table 6: Mapping from NRM ~~MOC~~ IOC `ExternalGsmCell` attributes to SS equivalent MOC ExternalGsmCell attributes

NRM Attributes of MOC ~~ExternalGsmCell~~ in 3GPP TS 32.652 [4]	SS Attributes	SS Type	Qualifier		
~~ExternalGsmCellId~~	~~externalGsmCellId~~	~~string~~	~~Read Only, M~~		
~~UserLabel~~	~~userLabel~~	~~string~~	~~Read Write, M~~		
~~CellIdentity~~	~~cellIdentity~~	~~long~~	~~Read Write, M~~		
~~BcchFrequency~~	~~bcchFrequency~~	~~long~~	~~Read Write, M~~		
~~Ncc~~	~~ncc~~	~~long~~	~~Read Write, M~~		
~~Bcc~~	~~bcc~~	~~long~~	~~Read Write, M~~		
~~Lac~~	~~lac~~	~~long~~	~~Read Write, M~~		
~~Mcc~~	~~mcc~~	~~long~~	~~Read Write, M~~		
~~Mnc~~	~~mnc~~	~~long~~	~~Read Write, M~~		
~~Rac~~	~~rac~~	~~long~~	~~Read Write, O~~		
~~Racc~~	~~racc~~	~~Long~~	~~Read Write, O~~		
NRM Attributes of IOC `ExternalGSMCell` in 3GPP TS 32.652 [4]	**SS Attributes**	**SS Type**	**Support Qualifier**	**Read**	**Write**
externalGsmCellId	externalGsmCellId	string	M	M	-
userLabel	userLabel	string	M	M	M
cellIdentity	cellIdentity	long	M	M	M
bcchFrequency	bcchFrequency	long	M	M	M
ncc	ncc	long	M	M	M
bcc	bcc	long	M	M	M
lac	lac	long	M	M	M
mcc	mcc	long	M	M	M
nnc	mnc	long	M	M	M
rac	rac	long	O	M	M
racc	racc	long	O	M	M

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

NRM ~~MOCs~~ IOCs may be subclassed. Subclassed ~~MOCs~~ IOCs 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~~ IOC shall support all attributes of its superior class. Vendor-specific attributes cannot be added to 3GPP SA5 NRM ~~MOCs~~ IOCs 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~~ IOCs 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 (3GPP TS 32.623-3).

Extension rules related to notifications (Notification categories, Event Types, Extended Event Types etc.) are for further study in 3GPP's Releases 5.

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~~IOCs) specified in the present document may not be subclassed or extended. New interfaces may be defined with vendor-specific methods.