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Foreword

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Contents

Foreword

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

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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Introduction

The present document is part of a TS-family covering the 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Telecommunication management; as identified below:

32.651: Configuration Management (CM); GERAN network resources Integration Reference Point (IRP): Requirements

32.652: Configuration Management (CM); GERAN network resources Integration Reference Point (IRP): Network Resource Model (NRM)

32.653: Configuration Management (CM); GERAN network resources Integration Reference Point (IRP): Common Object Request Broker Architecture (CORBA) Solution Set (SS)

32.655: Configuration Management (CM); GERAN network resources Integration Reference Point (IRP): Bulk CM eXtensible Markup Language (XML) file format definition

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

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

1 Scope

The present document is part of an Integration Reference Point (IRP) named "GERAN Network Resources IRP", through which an "IRPAgent" (typically an Element Manager or Network Element) can communicate Configuration Management information to one or several "IRPManagers" (typically Network Managers) concerning GERAN resources. The "GERAN Network Resources IRP" comprises a set of specifications defining Requirements, a protocol neutral Network Resource Model (NRM) and corresponding Solution Set(s).

The present document specifies the protocol neutral GERAN Network Resources IRP: Network Resource Model. It reuses relevant parts of the generic NRM in TS 32.622 [16], either by direct reuse or sub-classing, and in addition to that defines GERAN specific Managed Object Classes.

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

To summarize, the present document has following main purpose: to define the applied GERAN specific Network Resource Model, based on the generic NRM in TS 32.622 [16].

In order to access the information defined by this NRM, an IRP Information Service (IS) is needed, such as the Basic CM IRP: IS (TS 32.602 [17]) or the Bulk CM IRP: IS (TS 32.612 [18]). However, which Information Service that is applicable is outside the scope of the present document.

Regarding the support of the State Management IRP: IS (TS 32.672 [9]), all NRMs of one release shall support the same State Management IRP version.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1] 3GPP TS 32.101: "Telecommunication management; Principles and high level requirements".

[2] 3GPP TS 32.102: "Telecommunication management; Architecture".

[3] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3".

[4] 3GPP TS 44.018: "Mobile radio interface layer 3 specification; Radio Resource Control (RRC) protocol".

[5] 3GPP TS 45.008: "Radio subsystem link control".

[6] 3GPP TS 45.002: "Multiplexing and multiple access on the radio path".

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

[8] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[9] 3GPP TS 32.672: "Telecommunication management; Configuration Management (CM); State Management Integration Reference Point (IRP): Information Service (IS)".

[10] Void.

[11] 3GPP TS 32.111-2: "Telecommunication management; Fault Management (FM); Part 2: Alarm Integration Reference Point (IRP): Information Service (IS)".

[12] Void

[13] 3GPP TS 32.300: "Telecommunication management; Configuration Management (CM); Name convention for Managed Objects".

[14] 3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

[15] Void.

[16] 3GPP TS 32.622: "Telecommunication management; Configuration Management (CM); Generic network resources Integration Reference Point (IRP): Network Resource Model (NRM)".

[17] 3GPP TS 32.602: "Telecommunication management; Configuration Management (CM); Basic CM Integration Reference Point (IRP) Information Service (IS)".

[18] 3GPP TS 32.612: "Telecommunication management; Configuration Management (CM); Bulk CM Integration Reference Point (IRP): Information Service (IS)".

[19] 3GPP TS 32.642: " Telecommunication management; Configuration Management (CM); UTRAN network resources Integration Reference Point (IRP); Network Resource Model (NRM) ".[20] 3GPP TS 32.762: "Telecommunication management; Evolved Universal Terrestrial Radio Access Network (E-UTRAN) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

3 Definitions and abbreviations

3.1 Definitions

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

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

(1) name bindings,

(2) reference attributes, and

(3) association objects.

This IRP stipulates that containment associations shall be expressed through name bindings, but it does not stipulate the implementation for other types of associations as a general rule. These are specified as separate entities in the object models (UML diagrams).

Managed Element (ME): An instance of the IOC ManagedElement, defined in 3GPP TS 32.622 [16].

Managed Object (MO): In the context of the present document, a Managed Object (MO) is a software object that encapsulates the manageable characteristics and behaviour of a particular Network Resource. The MO is instance of a class defined in a MIM/NRM. This class, called **Information Object Class (IOC)** has attributes that provide information used to characterize the objects that belong to the class (the term "attribute" is taken from TMN and corresponds to a "property" according to CIM). Furthermore, the IOC can have operations that represent the behaviour relevant for that class (the term "operation" is taken from TMN and corresponds to a "method" according to CIM). The

IOC may support the emission of notifications that provide information about an event occurrence within a network resource.

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

(1) a Name space (describing the MO containment hierarchy in the MIB through Distinguished Names),

(2) a number of IOCs with their attributes and

(3) a number of Associations between these IOCs. Also note that TMN (ITU-T Recommendation X.710 [7]) defines a concept of a Management Information Tree (also known as a Naming Tree) that corresponds to the name space (containment hierarchy) portion of this MIB definition. Figure 3.1 depicts the relationships between a Name space and a number of participating MOs (the shown association is of a non-containment type).

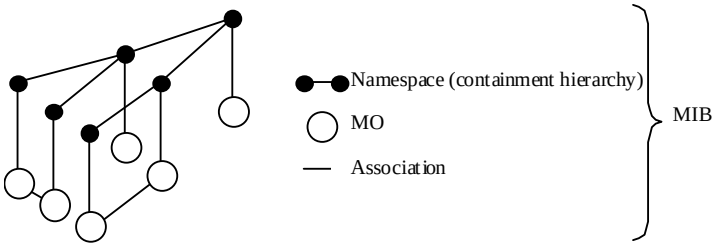


Figure 3.1: Relationships between a Name space and a number of participating MOs

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

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

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

3.2 Abbreviations

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

CIM	Common Information Model
DN	Distinguished Name (see 3GPP TS 32.300 [13])
EM	Element Manager
FM	Fault Management
GERAN	GSM-EDGE Radio Access Network
GPRS	General Packet Radio System
IOC	Information Object Class
IRP	Integration Reference Point
ME	Managed Element
MIB	Management Information Base
MIM	Management Information Model
MO	Managed Object
NE	Network Element
NR	Neighbour cell Relation
NRM	Network Resource Model
RDN	Relative Distinguished Name (see 3GPP TS 32.300 [13])
RNC	Radio Network Controller
SS	Solution Set

TMN	Telecommunications Management Network
UML	Unified Modelling Language
XML	eXtensible Mark-up Language

4 System overview

4.1 Void

4.2 Compliance rules

The following defines the meaning of Mandatory and Optional IOC attributes and associations between IOCs, in Solution Sets to the IRP defined by the present document:

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

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

Given that

- rules for vendor-specific extensions remain to be fully specified, and
- many scenarios under which IRPManager and IRPAgent interwork may exist,

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

5 Modelling approach

The modelling approach adopted and used in this IRP is described in clause 5 of Generic Network Resources IRP: NRM 3GPP TS 32.622 [16].

6 Information Object Classes

6.1 Imported information entities and local labels

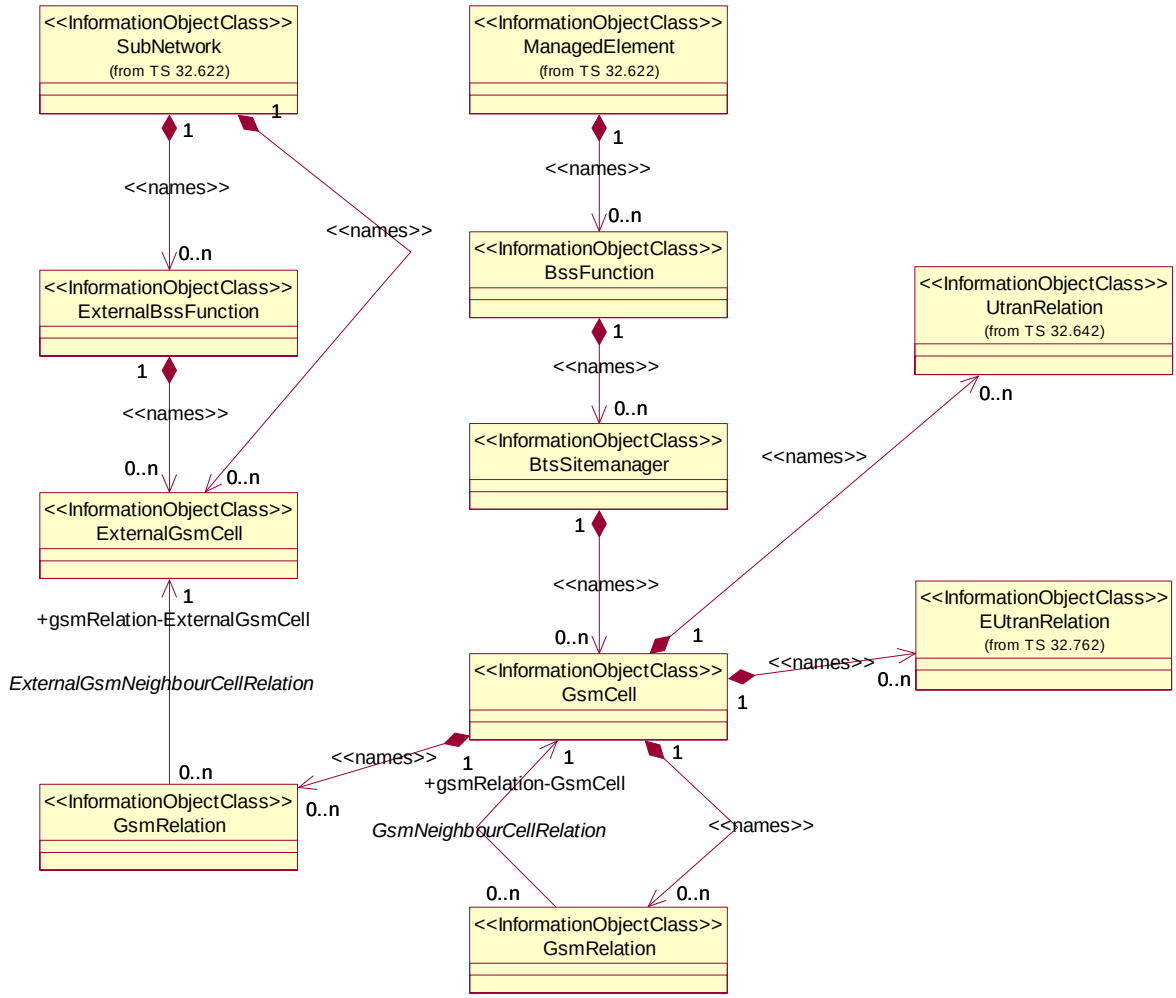
Label reference	Local label
3GPP TS 32.622 [15], information object class, `ManagedElement`	`ManagedElement`
3GPP TS 32.622 [15], information object class, `ManagedFunction`	`ManagedFunction`
3GPP TS 32.622 [15], information object class, `SubNetwork`	`SubNetwork`
3GPP TS 32.622 [15], information object class, `Top`	`Top`
3GPP TS 32.622 [15], information object class, `VsDataContainer`	`VsDataContainer`
3GPP TS 32.642 [10], information object class, `ExternalUtranCell`	`ExternalUtranCell`
3GPP TS 32.642 [19], information object class, `UtranRelation`	`UtranRelation`
3GPP TS 32.762 [20], information object class, `EUtranRelation`	`EUtranRelation`

6.2 Class diagram

6.2.1 Attributes and relationships

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

The figures below show the containment/naming hierarchy and the associations of the GERAN NRM.

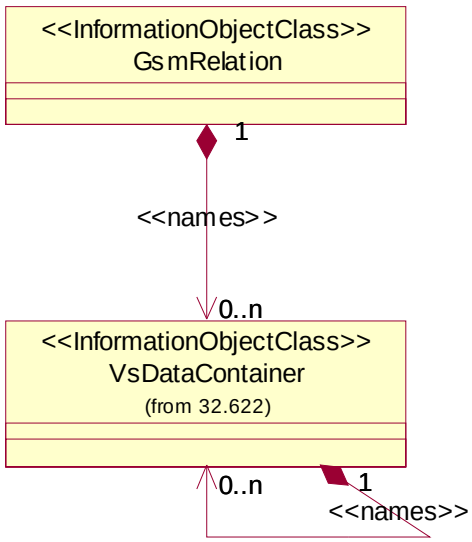


NOTE 1: The listed cardinality numbers represent transient as well as steady-state numbers, and reflect all managed object creation and deletion scenarios.
NOTE 2: Void.
NOTE 3: The `ExternalBssFunction` is used in the Core Network NRM.

Figure 6.1: GERAN 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 an IOC representing a cell could have a format like:

`SubNetwork` =Sweden,`MeContext` =MEC-Gbg-1, `ManagedElement` =RNC-Gbg-1, `BssFunction`=BSS1.



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.

Figure 6.2: GERAN NRM Containment/Naming and Association diagram

The `VsDataContainer` is only used for the Bulk CM IRP.

6.2.2 Inheritance

This clause depicts the inheritance relationships that exist between IOCs.

Figure 6.3 shows the inheritance hierarchy for the GERAN NRM.

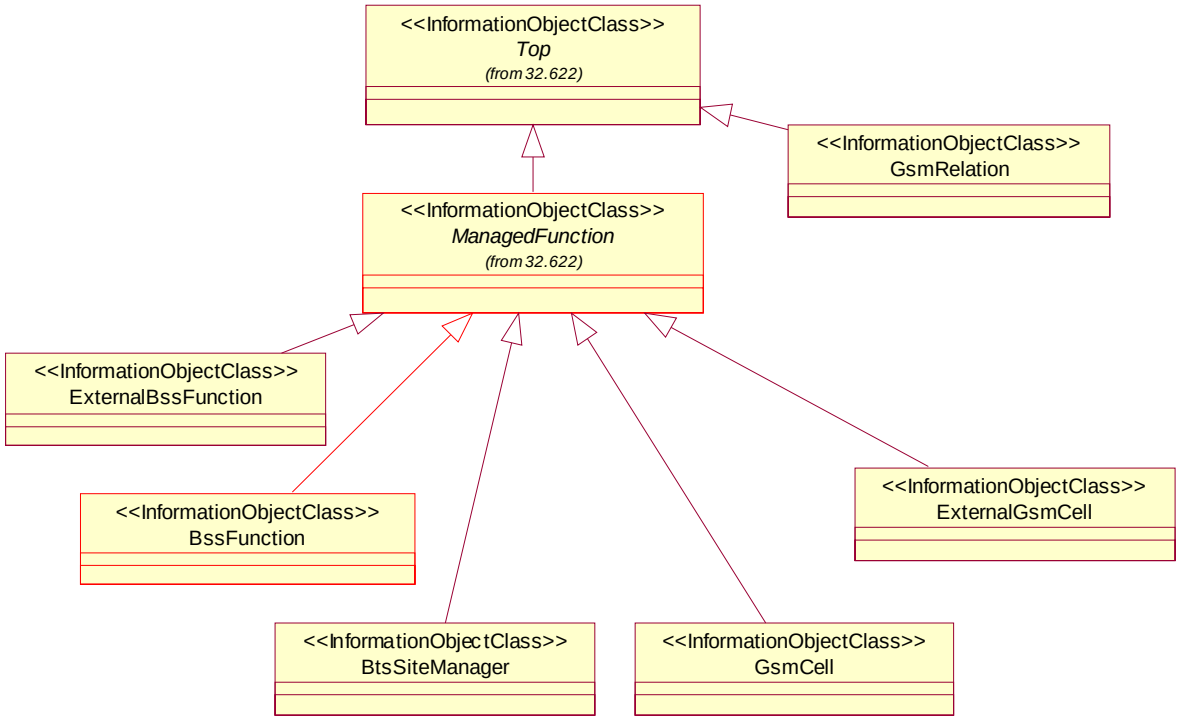


Figure 6.3: GERAN NRM Inheritance Hierarchy

6.3 Information object class definitions

6.3.1 BssFunction

6.3.1.1 Definition

This IOC represents BSS functionality. For more information about the BSS, see GSM 03.02.

6.3.1.2 Attributes

Table 6.1: Attributes of `BssFunction`

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
`bssFunctionId`	+	M	M	-
`userLabel`	+	M	M	M

6.3.2 BtsSiteMgr

6.3.2.1 Definition

This IOC contains site specific information for a BTS site.

6.3.2.2 Attributes

Table 6.3a: Attributes of `BtsSiteMgr`

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
btsSiteMgrId	+	M	M	-
userLabel	+	M	M	M
latitude	+	O	M	M
longitude	+	O	M	M

Table 6.3b: Additional attributes of `BtsSiteMgr` for the support of the State Management IRP

Attribute Name	Support Qualifier	READ	WRITE
operationalState	O	M	—
NOTE: No state propagation shall be implied.			

6.3.3 GsmCell

6.3.3.1 Definition

This IOC represents the GSM radio cell. The applicability of instantiation of this class is depending on the ME type. It may only be instantiated under ME of type BSC.

6.3.3.2 Attributes

Table 6.5: Attributes of `GsmCell`

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
gsmCellId	+	M	M	-
userLabel	+	M	M	M
cellIdentity	+	M	M	M
cellAllocation	+	M	M	M
ncc	+	M	M	M
bcc	+	M	M	M
lac	+	M	M	M
mcc	+	M	M	M
mnc	+	M	M	M
rac	+	O	M	M
racc	+	O	M	M
tsc	+	M	M	M
rxLevAccessMin	+	M	M	M
msTxPwrMaxCCH	+	M	M	M
hoppingSequenceNumber	+	M	M	M
plmnPermitted	+	M	M	M

6.3.3.3 Attribute constraints

The optionally attributes `rac` and `racc` shall be included if the cell is a GPRS cell. Otherwise they shall not be included.

6.3.4 GsmRelation

6.3.4.1 Definition

This IOC contains a Neighbour cell Relation (NR) from a source cell to a target cell, where the target cell is a `GsmCell` or `ExternalGsmCell` instance.

Note: In handover relation terms, the cell containing the `GsmRelation` object is the source cell for the handover. The cell referred to in the `GsmRelation` object is the target cell for the handover. This defines a one-way handover relation where the direction is *from* source cell *to* target cell.

The source cell can be a GsmCell instance. This is the case for an Intra-GERAN NR.

The source cell can be a UtranGenericCell instance. This is the case for Inter-RAT NR from UTRAN to GERAN See 3GPP TS 32. 642 [19].

The source cell can be a EUtranGenericCell instance. This is the case for Inter-RAT NR from E-UTRAN to GERAN See 3GPP TS 32. 762 [20].

6.3.4.2 Attributes

Table 6.7: Attributes of `GsmRelation`

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
gsmRelationId	+	M	M	-
adjacentCell	+	M	M	M
bcchFrequency	+	O	M	-
ncc	+	O	M	-
bcc	+	O	M	-
lac	+	O	M	-
isHOAllowed	+	CM	M	M
isRemoveAllowed	+	CM	M	M

6.3.4.3 Attribute constraints

The optionally attributes `bcchFrequency`, `ncc`, `bcc` and `lac` shall be included if the EM does not guarantee consistency between the cell definition and what is broadcasted on system information. Otherwise they shall not be included.

Name	Definition
isRemoveAllowed Support Qualifier	The condition is "Inter-RAT ANR function is supported in the source cell, and the source cell is an EUtranGenericCell".
isHOAllowed Support Qualifier	The condition is "Inter-RAT ANR function is supported in the source cell, and the source cell is an EUtranGenericCell".

6.3.5 ExternalGsmCell

6.3.5.1 Definition

This IOC represents a radio cell controlled by another `IRPAgent`. This IOC has necessary attributes for inter-system handover. It contains a subset of the attributes of related IOCs controlled by another `IRPAgent`. To maintain the consistency between the attribute values of these two IOCs is outside the scope of this document.

6.3.5.2 Attributes

Table 6.9: Attributes of `ExternalGsmCell`

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
externalGsmCellId	+	M	M	-
userLabel	+	M	M	M
cellIdentity	+	M	M	M
bcchFrequency	+	M	M	M
ncc	+	M	M	M
bcc	+	M	M	M
lac	+	M	M	M
mcc	+	M	M	M
mnc	+	M	M	M
rac	+	O	M	M
racc	+	O	M	M

6.3.5.3 Attribute constraints

The optionally attributes `rac` and `racc` shall be included if the cell is a GPRS cell. Otherwise they shall not be included.

6.3.6 ExternalBssFunction

6.3.6.1 Definition

This IOC represents a `BssFunction` controlled by another `IRPAgent`. It contains a subset of the attributes of related IOCs controlled by another `IRPAgent`. To maintain the consistency between the attribute values of these two IOCs is outside the scope of the present document.

6.3.6.2 Attributes

Table 6.11: Attributes of `ExternalBssFunction`

Attribute name	Visibility	Support Qualifier	Read Qualifier	Write Qualifier
externalBssFunctionId	+	M	M	-
userLabel	+	M	M	M

6.3.6.3 Attribute constraints

None.

6.4 Information relationship definitions

6.4.1 ExternalGsmNeighbourCellRelation (M)

6.4.1.1 Definition

This represents a unidirectional relation from `GsmRelation` to the `ExternalGsmCell`. The role of the relation shall be mapped to a reference attribute, named `adjacentCell`, of the IOC.

6.4.1.2 Roles

Table 6.11: Roles of the relation ExternalGsmNeighbourCellRelation

Name	Definition
gsmRelation-externalGsmNeighbourCell	This role (when present) represents `GsmRelation` capability to identify one `ExternalGsmCell`. When this role is present, the `GsmRelation.adjacentCell` shall contain one `ExternalGsmCell` DN.

6.4.1.3 Constraints

Name	Definition
external_neighbour_cell_relation	The role gsmRelation-externalGsmNeighbourCell is only present if the target cell is managed by another IRPAgent than the serving cell.

6.4.2 GsmNeighbourCellRelation (M)

6.4.2.1 Definition

This represents the unidirectional relation from the `GsmRelation` to `GsmCell`. The role of the relation shall be mapped to a reference attribute, named `adjacentCell`, of the IOC.

6.4.2.2 Roles

Table 6.12: Roles of the relation GsmNeighbourCellRelation

Name	Definition
gsmRelation-gsmNeighbourCell	This role (when present) represents `GsmRelation` capability to identify one `GsmCell`. When this role is present, the `GsmRelation.adjacentCell` shall contain one `GsmCell` DN.

6.4.2.3 Constraints

This role (for a particular `GsmRelation`) shall be present if the ExternalGsmNeighbourCellRelation of this particular `GsmRelation` is absent. This role shall be absent if the ExternalGsmNeighbourCellRelation of this particular `GsmRelation` is present.

Name	Definition
internal_neighbour_cell_relation	The role gsmRelation-gsmNeighbourCell is only present if the target cell is managed by the same IRPAgent as the serving cell.

6.5 Information attribute definitions

6.5.1 Definition and legal values

Table 6.13 defines the attributes that are present in several information object classes of the present document.

Table 6.13: Attributes

Attribute Name	Definition	Legal Values
adjacentCell	Pointer to GsmCell or ExternalGsmCell. Distinguished Name of the corresponding object.	
bcc	IOCs **GsmCell** and **ExternalGsmCell**: Base station colour code, BCC (part of BSIC). Ref 3GPP TS 44.018 [4]. IOC **GsmRelation**: Base station colour code, BCC (part of BSIC. Ref 3GPP TS 44.018 [4]) for another GSM cell or the external GSM cell, that is broadcast in System Information in the Cell.	
bcchFrequency	IOC **ExternalGsmCell**: This attribute contains the absolute radio frequency channel number of the BCCH channel of the GSM cell. IOC **GsmRelation**: This attribute contains the absolute radio frequency channel number of the BCCH channel of another GSM cell or the external GSM cell, that is broadcast in System Information in the Cell.	
bssFunctionId	An attribute whose "name+value" can be used as an RDN when naming an instance of the object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
btsSiteMgrId	An attribute whose "name+value" can be used as an RDN when naming an instance of the object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
cellAllocation	This attribute defines the set of radio frequencies allocated and available to a cell, the first element sets the BCCH frequency, Ref 3GPP TS 44.018 [4].	
cellIdentity	Cell Identity (Ref 3GPP TS 24.008 [3]).	
externalBssFunctionId	An attribute whose "name+value" can be used as an RDN when naming an instance of the object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
externalGsmCellId	An attribute whose "name+value" can be used as an RDN when naming an instance of the object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
gsmCellId	An attribute whose "name+value" can be used as an RDN when naming an instance of the object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
gsmRelationId	An attribute whose "name+value" can be used as an RDN when naming an instance of the object class. This RDN uniquely identifies the object instance within the scope of its containing (parent) object instance.	
hoppingSequenceNumber	HoppingSequenceNumber. Attribute description reference 3GPP TS 45.002 [6] (HSN)	
lac	IOCs **GsmCell** and **ExternalGsmCell**: Location Area Code, LAC . Ref 3GPP TS 24.008 [3]. IOC **GsmRelation**: Location Area Code, LAC (Ref 3GPP TS 24.008 [3]) for another GSM cell or the external GSM cell, that is broadcast in System Information in the Cell.	
latitude	Used for geographical positioning of the sitemanager	
longitude	Used for geographical positioning of the sitemanager	
mcc	Mobile Country Code, MCC (part of the PLMN Id, Ref. 3GPP TS 23.003 [8]).	
mnc	Mobile Network Code, MNC (part of the PLMN Id, Ref. 3GPP TS 23.003 [8]).	
msTxPwrMaxCCH	Maximum Transmission Power for a Mobile Station on a CCH. Attribute description Ref 3GPP TS 45.008 [5] (MS_TXPWR_MAX_CCH)	
ncc	IOCs **GsmCell** and **ExternalGsmCell**: Network Colour Code, NCC (part of BSIC). Ref 3GPP TS 44.018 [4]. IOC **GsmRelation**: Network Colour Code, NCC (part of BSIC. Ref 3GPP TS 44.018 [4]) for another GSM cell or the external GSM cell, that is broadcast in System Information in the Cell.	
plmnPermitted	Network Colour Code Permitted. Attribute description reference 3GPP TS 45.008 [5] (NCC_PERMITTED)	

Attribute Name	Definition	Legal Values
rac	Routing Area Code, RAC. Ref 3GPP TS 44.018 [4].	
racc	Routing Area Colour Code, RACC. Ref 3GPP TS 44.018 [4].	
rxLevAccessMin	Minimum Access Level. Attribute description Ref 3GPP TS 45.008 [5] (RXLEV_ACCESS_MIN)	
tsc	Training Sequence Code, an attribute of the class channel in Ref 3GPP TS 44.018 [4]	
userLabel	IOC **BssFunction**: A user-friendly (and user assigned) name of the associated object. Inherited from ManagedFunction. **Other IOCs**: A user-friendly (and user assigned) name of the associated object.	
isHOAllowed	This indicates if HO is allowed or prohibited. If "yes", handover is allowed from source cell to target cell. The source cell is identified by the name-containing EUtranGenericCell of the GsmRelation that has the isHOAllowed. The target cell is referenced by the GsmRelation that has this isHOAllowed. If "no", handover shall not be allowed.	yes, no
isRemoveAllowed	This indicates if the subject GsmRelation can be removed (deleted) or not. If "yes", the subject GsmRelation instance can be removed (deleted). If "no", the subject GsmRelation instance shall not be removed (deleted) by any entity but an IRPManager.	yes, no

6.5.2 Constraints

Name	Definition
-	-

6.6 Common Notifications

The following notifications apply to the following IOCs:

- BssFunction;
- BtsSiteMgr;
- GsmCell.

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])	

The following notifications apply to the following IOCs:

- GsmRelation;
- ExternalGsmCell;

- `ExternalBssFunction.`

Name	Qualifier	Notes
notifyAttributeValueChange	O	
notifyObjectCreation	O	
notifyObjectDeletion	O	

6.7 Particular information configurations

Not applicable.

Annex A (informative): Change history

Change history								
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Cat**	**Old**	**New**
Jun 2001	SA_12	SP-010283	--	--	Approved at TSG SA #12 and placed under Change Control		2.0.0	4.0.0
Sep 2001	SA_13	SP-010477	0001	--	Addition of mcc and mnc in the object model of GERAN	F	4.0.0	4.1.0
Dec 2001	SA_14	SP-010650	0002	--	Correction of references	F	4.1.0	4.2.0
Jun 2002	SA_16	SP-020305	0003	--	Addition of the attributes mcc and mnc in the object model of GERAN	F	4.2.0	4.3.0
Jun 2002	SA_16	SP-020305	0004	--	Correction of attribute descriptions in the Managed Object Class (MOC) GsmRelation of 32.652 (GERAN network resources IRP: NRM)	F	4.2.0	4.3.0
Jun 2002	SA_16	SP-020304	0005	--	Correction of supported IRP in system context	F	4.2.0	4.3.0
Sep 2002	SA_17	SP-020494	0006	--	UML corrections	F	4.3.0	4.4.0
Sep 2002	SA_17	SP-020496	0007	--	Add State Management	B	4.4.0	5.0.0
Dec 2002	--	--	--	--	Cosmetics	--	5.0.0	5.0.1
Jun 2003	SA_20	SP-030282	0010	--	Include notification tables	A	5.0.1	5.1.0
Jun 2003	SA_20	SP-030282	0012	--	Correction of UML diagram vsDataContainer Containment/Naming and Association in GERAN NRM	A	5.0.1	5.1.0
Jun 2003	SA_20	SP-030283	0014	--	Deletion of GERAN attribute relationType	A	5.0.1	5.1.0
Sep 2003	SA_21	SP-030418	0015	--	Inclusion of External BSS Function in GERAN NRM - Alignment with 32.632	F	5.1.0	5.2.0
Dec 2003	SA_22	SP-030641	0016	--	Add missing notification notifyPotentialFaultyAlarmlist	F	5.2.0	5.3.0
Dec 2003	SA_22	SP-030643	0017	--	VsDataContainer Containment UML - Now covered by 32.622	F	5.2.0	5.3.0
Sep 2004	SA_25	SP-040584	0018		Add support for the state change notification in GERAN network resources IRP NRM	B	5.3.0	6.0.0
Mar 2005	--	--	--	--	Title corrected (changed Release 5 to Release 6)	--	6.0.0	6.0.1
Jun 2005	SA_28	SP-050298	0019	--	Correction of System Context and Compliance rules	F	6.0.1	6.1.0
Dec 2005	SA_30	SP-050713	0020	--	Correct relationships for External IOCs	F	6.1.0	6.2.0
Dec 2005	SA_30	SP-050723	0021	--	Apply IS Template and the UML Repertoire - Align with 32.151 and 32.152	F	6.1.0	6.2.0
Jan 2006	--	--	--	--	Editorial correction to change history table.	--	6.2.0	6.2.1
Jun 2007	SA_36	--	--	--	Automatic upgrade to Rel-7 (no CR) at freeze of Rel-7. Deleted reference to CMIP SS, discontinued from R7 onwards.	--	6.2.1	7.0.0
Dec 2008	SA_42	--	--	--	Upgrade to Release 8	--	7.0.0	8.0.0
Dec 2011	SA_54	SP-110704	0029	2	Add Neighbour cell Relation from GERAN towards E-UTRAN	F	8.0.0	8.1.0
Dec 2011	SA_54	SP-110704	0032	2	Add management of IRAT ANR from E-UTRAN to GERAN	F	8.0.0	8.1.0

History

Document history		
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