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Digital cellular telecommunications system (Phase 2+);
Telecommunication management;
Configuration Management (CM);
GERAN network resources Integration Reference Point (IRP):
Common Management Information Protocol (CMIP) solution set
(3GPP TS 32.654 version 5.3.0 Release 5)

GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS

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Foreword

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Contents

Foreword

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Introduction

The interface Itf-N, defined in 3GPP TS 32.102 [2], 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].

1 Scope

The present document specifies the Common Management Information Protocol (CMIP) Solution Set (SS) for the GERAN Network Resource Integration Reference Point (IRP): Network Resource Model defined in 3GPP TS 32.652 [4]. In detail:

- Clause 4 contains an introduction to some concepts that are the base for some specific aspects of the CMIP interfaces.

- Clause 5 contains the GDMO definitions for the Alarm Management over the CMIP interfaces

- Clause 6 contains the ASN.1 definitions supporting the GDMO definitions provided in clause 5.

This Solution Set specification is related to 3GPP TS 32.652 V5.2.x.

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 32.304: "Telecommunication management; Configuration Management (CM); Notification Integration Reference Point (IRP): Common Management Information Protocol (CMIP) Solution Set (SS)".

[4]   3GPP TS 32.652: "Telecommunication management; Configuration Management (CM); GERAN network resources Integration Reference Point (IRP): Network Resource Model (NRM)".

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

[6]   ITU-T Recommendation X.721 (02/92): "Information Technology - Open Systems Interconnection – Structure of Management Information: Definition of Management Information".

[7]   ITU-T Recommendation X.730 (01/92): "Information Technology - Open Systems Interconnection – Systems Management: Object Management Function".

[8]   ITU-T Recommendation X.733 (02/92): "Information Technology - Open Systems Interconnection - Alarm Reporting Function".

[9]   ITU-T Recommendation M.3100 (07/95): "Maintenance Telecommunications Management Network – Generic Network Information Model".

[10]   GSM 12.20 (06/1996): "Digital cellular communication system (Phase 2); Base Station System (BSS) Management Information".

[11]   3GPP TS 32.600: "Telecommunication management; Configuration Management (CM); Concept and high-level requirements".

[12]   3GPP TS 32.644: "Telecommunication management; Configuration Management (CM); UTRAN network resources Integration Reference Point (IRP): Common Management Information Protocol (CMIP) Solution Set (SS)".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TS 32.600 [11] and 3GPP TS 32.652 [4] apply.

3.2 Abbreviations

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

CMIP	Common Management Information Protocol
DN	Distinguished Name
GDMO	Guidelines for the Definition of Managed Objects
GERAN	GSM-EDGE Radio Access Network
IDL	Interface Definition Language
IEC	International Electro-technical Commission
ISO	International Standards Organization
MIB	Management Information Base
MIM	Management Information Model
MIT	Management Information Tree (or Naming Tree)
MOC	Managed Object Class
MOI	Managed Object Instance
NE	Network Element
NR	Network Resource
NRM	Network Resource Model
TMN	Telecommunications Management Network
UTRAN	Universal Terrestrial Radio Access Network

4 Basic aspects

4.1 Architectural Aspects

A technology independent GERAN network resource model is defined in 3GPP TS 32.652 [4] for 3G networks. This document provides an implementation of this GERAN network resource model by using CMIP technology.

4.2 Mapping

The semantic of the GERAN Network Resource Model is defined in 3GPP TS 32.652 [4]. The specification of the information object classes defined there is independent of any implementation technology and protocol.
This clause maps these technology and protocol independent definitions onto the equivalencies of the CMIP Solution Set of the GERAN Network Resource IRP.

4.2.1 Mapping of Information Object Classes

The following table maps the information object classes defined in the GERAN Network Resource Model onto the equivalent MOCs of the CMIP Solution Set.

Table 4.1: Mapping of MOCs

IS IOC	CMIP SS MOC
BssFunction	bssFunction
BtsSiteMgr	btsSiteMgr
GsmCell	gsmCell
GsmRelation	gsmRelation
ExternalGsmCell	externalGsmCell
ExternalBssFunction	externalBssFunction

4.2.2 Mapping of Information Object Class Attributes

This clause depicts the mapping of the attributes defined in 3GPP TS 32.652 [4] on the corresponding attributes of the CMIP Solution Set.

4.2.2.1 Attribute Mapping of the IOC *BssFunction*

Table 4.2: Attribute mapping of the IOC *BssFunction*

IS Attribute	CMIP SS Attribute	Qualifier
bssFunctionId	bssFunctionId	M
userLabel	userLabel (ITU-T Rec. M.3100 [9])	M

4.2.2.2 Attribute Mapping of the IOC *BtsSiteMgr*

Table 4.3: Attribute mapping of the IOC *BtsSiteMgr*

IS Attribute	CMIP SS Attribute	Qualifier
btsSiteMgrId	btsSiteMgrId	M
userLabel	userLabel (ITU-T Rec. M.3100 [9])	M
latitude	latitude	O
longitude	longitude	O

4.2.2.3 Attribute Mapping of the IOC *GsmCell*

Table 4.4: Attribute mapping of the IOC *GsmCell*

IS Attribute	CMIP SS Attribute	Qualifier
gsmCellId	gsmCellId	M
userLabel	userLabel (ITU-T Rec. M.3100 [9])	M
cellIdentity		
lac	cellGlobalIdentity (GSM 12.20 [10])	M
mcc		
mnc		
cellAllocation	cellAllocation (GSM 12.20 [10])	M
ncc	bsIdentityCode.ncc (GSM 12.20 [10])	M
bcc	bsIdentityCode.bcc (GSM 12.20 [10])	M
rac	rac (3GPP TS 32.644 [12])	O
racc	racc	O
tsc	tsc (GSM 12.20 [10])	M
rxLevAccessMin	rxLevAccessMin (GSM 12.20 [10])	M
msTxPwrMaxCCH	msTxPwrMaxCCH (GSM 12.20 [10])	M
hoppingSequenceNumber	hoppingSequenceNumber (GSM 12.20 [10])	M
plmnPermitted	plmnPermitted (GSM 12.20 [10])	M

4.2.2.4 Attribute Mapping of the IOC *GsmRelation*

Table 4.5: Attribute mapping of the IOC *GsmRelation*

IS Attribute	CMIP SS Attribute	Qualifier
gsmRelationId	gsmRelationId	M
adjacentCell	adjacentCell (3GPP TS 32.644 [12])	M
bcchFrequency	bcchFrequency (GSM 12.20 [10])	O
ncc	bsIdentityCode.ncc (GSM 12.20 [10])	O
bcc	bsIdentityCode.bcc (GSM 12.20 [10])	O
lac	lac (3GPP TS 32.644 [12])	O

4.2.2.5 Attribute Mapping of the IOC *ExternalGsmCell*

Table 4.6: Attribute mapping of the IOC *ExternalGsmCell*

IS Attribute	CMIP SS Attribute	Qualifier
externalGsmCellId	externalGsmCellId	M
userLabel	userLabel (ITU-T Rec. M.3100 [9])	M
cellIdentity		
lac	cellGlobalIdentity (GSM 12.20 [10])	M
mcc		
mnc		
bcchFrequency	bcchFrequency (GSM 12.20 [10])	M
ncc	bsIdentityCode.ncc (GSM 12.20 [10])	M
bcc	bsIdentityCode.bcc (GSM 12.20 [10])	M
rac	rac (3GPP TS 32.644 [12])	O
racc	racc	O

4.2.2.6 Attribute Mapping of the IOC *ExternalBssFunction*

Table 4.7: Attribute mapping of the IOC *ExternalBssFunction*

IS Attribute	CMIP SS Attribute	Qualifier
externalBssFunctionId	externalBssFunctionId	M
userLabel	userLabel (ITU-T Rec. M.3100 [9])	M

5 GDMO Definitions

5.1 Managed Object Classes

5.1.1 bssFunction

```
bssFunction MANAGED OBJECT CLASS
    DERIVED FROM
        "3GPP TS 32.624 Release 5": managedFunction;
    CHARACTERIZED BY
        bssFunctionBasicPackage,
        "3GPP TS 32.111-4 Release 5": x721AlarmNotificationsPackage;
    CONDITIONAL PACKAGES
        "Rec. M.3100: 1995":createDeleteNotificationsPackage
            PRESENT IF
                "the objectCreation and the objectDeletion notifications defined in
                 ITU-T Rec. X.721 are supported by an instance of this class.",
        "Rec. M.3100: 1995":attributeValueChangeNotificationPackage
            PRESENT IF
                "the attributeValueChange notification defined in ITU-T Rec. X.721
                 is supported by an instance of this class.";
REGISTERED AS {ts32-654ObjectClass 1};
```

5.1.2 btsSiteMgr

```
btsSiteMgr MANAGED OBJECT CLASS
    DERIVED FROM
        "3GPP TS 32.624 Release 5": managedFunction;
    CHARACTERIZED BY
        btsSiteMgrBasicPackage,
        "3GPP TS 32.111-4 Release 5": x721AlarmNotificationsPackage;
    CONDITIONAL PACKAGES
        "Rec. M.3100: 1995":createDeleteNotificationsPackage
            PRESENT IF
                "the objectCreation and the objectDeletion notifications defined in
                 ITU-T Rec. X.721 are supported by an instance of this class.",
        "Rec. M.3100: 1995":attributeValueChangeNotificationPackage
            PRESENT IF
                "the attributeValueChange notification defined in ITU-T Rec. X.721
                 is supported by an instance of this class.",
        "3GPP TS 32.674 Release 5": operationalStateAttributePackage
            PRESENT IF
                "Instances of this MOC support operationalState attribute.",
        btsSiteMgrGeoPositionPackage
            PRESENT IF
                "the attributes defined in this package are supported by an instance of this class.";
REGISTERED AS {ts32-654ObjectClass 2};
```

5.1.3 gsmCell

```
gsmCell MANAGED OBJECT CLASS
    DERIVED FROM
        "3GPP TS 32.624 Release 5": managedFunction;
CHARACTERIZED BY
        gsmCellBasicPackage,
        gsmCellMandatoryPackage,
        "3GPP TS 32.111-4 Release 5": x721AlarmNotificationsPackage;
    CONDITIONAL PACKAGES
        "Rec. M.3100: 1995":createDeleteNotificationsPackage
            PRESENT IF
                "the objectCreation and the objectDeletion notifications defined in
                 ITU-T Rec. X.721 are supported by an instance of this class.",
        "Rec. M.3100: 1995":attributeValueChangeNotificationPackage
            PRESENT IF
                "the attributeValueChange notification defined in ITU-T Rec. X.721
                 is supported by an instance of this class.",
        gsmCellOptionalPackage PRESENT IF
        "the attributes defined in this package are supported by an instance of this class.";
REGISTERED AS {ts32-654ObjectClass 3};
```

5.1.4   externalGsmCell

```
externalGsmCell MANAGED OBJECT CLASS
    DERIVED FROM
        "3GPP TS 32.624 Release 5": managedFunction;
    CHARACTERIZED BY
        externalGsmCellBasicPackage,
        externalGsmCellMandatoryPackage;
    CONDITIONAL PACKAGES
        "Rec. M.3100: 1995":createDeleteNotificationsPackage
            PRESENT IF
              "the objectCreation and the objectDeletion notifications defined in
               ITU-T Rec. X.721 are supported by an instance of this class.",
        "Rec. M.3100: 1995":attributeValueChangeNotificationPackage
            PRESENT IF
              "the attributeValueChange notification defined in ITU-T Rec. X.721
               is supported by an instance of this class.",
        gsmCellOptionalPackage
            PRESENT IF
              "the attributes defined in this package are supported by an instance of this class.";
REGISTERED AS {ts32-654ObjectClass 4};
```

5.1.5   gsmRelation

```
gsmRelation MANAGED OBJECT CLASS
    DERIVED FROM
        "Recommendation X.721: 1992":top;
    CHARACTERIZED BY
        gsmRelationBasicPackage;
    CONDITIONAL PACKAGES
        gsmRelationOptionalPackage
            PRESENT IF
              "the attributes defined in this package are supported by an instance of this class.",
        "Rec. M.3100: 1995":createDeleteNotificationsPackage
            PRESENT IF
              "the objectCreation and the objectDeletion notifications defined in
               ITU-T Rec. X.721 are supported by an instance of this class.",
        "Rec. M.3100: 1995":attributeValueChangeNotificationPackage
            PRESENT IF
              "the attributeValueChange notification defined in ITU-T Rec. X.721
               are supported by an instance of this class.";
REGISTERED AS {ts32-654ObjectClass 5};
```

5.1.6   externalBssFunction

```
externalBssFunction MANAGED OBJECT CLASS
    DERIVED FROM
        "3GPP TS 32.624 Release 5": managedFunction;
    CHARACTERIZED BY
        externalBssFunctionBasicPackage;
    CONDITIONAL PACKAGES
        "Rec. M.3100: 1995":createDeleteNotificationsPackage
            PRESENT IF
              "the objectCreation and the objectDeletion notifications defined in
               ITU-T Rec. X.721 are supported by an instance of this class.",
        "Rec. M.3100: 1995":attributeValueChangeNotificationPackage
            PRESENT IF
              "the attributeValueChange notification defined in ITU-T Rec. X.721
               is supported by an instance of this class.";
REGISTERED AS {ts32-654ObjectClass 6};
```

5.2   Packages

5.2.1   bssFunctionBasicPackage

```
bssFunctionBasicPackage PACKAGE
    BEHAVIOUR
        bssFunctionBasicPackageBehaviour;
    ATTRIBUTES
        bssFunctionId    GET;
```

```
REGISTERED AS {ts32-654Package 1};

bssFunctionBasicPackageBehaviour BEHAVIOUR
DEFINED AS
    "The Managed Object Class bssFunction represents BSS functionality.";
```

5.2.2   btsSiteMgrBasicPackage

```
btsSiteMgrBasicPackage PACKAGE
    BEHAVIOUR
        btsSiteMgrBasicPackageBehaviour;
    ATTRIBUTES
        btsSiteMgrId   GET;
REGISTERED AS {ts32-654Package 2};

btsSiteMgrBasicPackageBehaviour BEHAVIOUR
DEFINED AS
    "The 'BtsSiteMgr' managed object contains site specific information for a BTS site.";
```

5.2.3   btsSiteMgrGeoPositionPackage

```
btsSiteMgrGeoPositionPackage PACKAGE
    BEHAVIOUR
        btsSiteMgrGeoPositionPackageBehaviour;
    ATTRIBUTES
        longitude   GET-REPLACE,
        latitude    GET-REPLACE;
REGISTERED AS {ts32-654Package 3};

btsSiteMgrGeoPositionPackageBehaviour BEHAVIOUR
DEFINED AS
    "This package contains the attributes describing the geographic position of a BTS site.";
```

5.2.4   gsmCellBasicPackage

```
gsmCellBasicPackage PACKAGE
    BEHAVIOUR
        gsmCellBasicPackageBehaviour;
    ATTRIBUTES
        gsmCellId   GET;
REGISTERED AS {ts32-654Package 4};

gsmCellBasicPackageBehaviour BEHAVIOUR
DEFINED AS
    "The managed object class gsmCell represents the GSM radio cell.";
```

5.2.5   gsmCellMandatoryPackage

```
gsmCellMandatoryPackage PACKAGE
    BEHAVIOUR
        gsmCellMandatoryPackageBehaviour;
    ATTRIBUTES
        "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": cellAllocation          GET-REPLACE,
        "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": bsIdentityCode          GET-REPLACE,
        "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": cellGlobalIdentity      GET-REPLACE,
        "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": tsc                     GET-REPLACE,
        "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": rxLevAccessMin          GET-REPLACE,
        "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": msTxPwrMaxCCH           GET-REPLACE,
        "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": hoppingSequenceNumber   GET-REPLACE,
        "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": plmnPermitted           GET-REPLACE;
REGISTERED AS {ts32-654Package 5};

gsmCellMandatoryPackageBehaviour BEHAVIOUR
DEFINED AS
    "This package contains the elementary mandatory attributes of a gsmCell.";
```

5.2.6   gsmCellOptionalPackage

```
gsmCellOptionalPackage PACKAGE
    BEHAVIOUR
        gsmCellOptionalPackageBehaviour;
```

```
    ATTRIBUTES
      "3GPP TS 32.644 Release 5": rac    GET-REPLACE,
      racc                               GET-REPLACE;
REGISTERED AS {ts32-654Package 6};


gsmCellOptionalPackageBehaviour BEHAVIOUR
DEFINED AS
    "This package contains the optional GPRS attributes of a gsmCell.";
```

5.2.7   externalGsmCellBasicPackage

```
externalGsmCellBasicPackage PACKAGE
    BEHAVIOUR
      externalGsmCellBasicPackageBehaviour;
    ATTRIBUTES
      externalGsmCellId   GET;
REGISTERED AS {ts32-654Package 7};


externalGsmCellBasicPackageBehaviour BEHAVIOUR
DEFINED AS
    "This Managed Object Class represents a radio cell controlled by another IRPAgent. It is
     a necessary attribute for inter-system handover. This MOC is a subreplication of a
     MOC in another NEM.";
```

5.2.8   externalGsmCellMandatoryPackage

```
externalGsmCellMandatoryPackage PACKAGE
    BEHAVIOUR
      externalGsmCellMandatoryPackageBehaviour;
    ATTRIBUTES
      "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": bsIdentityCode      GET-REPLACE,
      "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": cellGlobalIdentity  GET-REPLACE,
      "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": bcchFrequency       GET-REPLACE;
REGISTERED AS {ts32-654Package 8};


externalGsmCellMandatoryPackageBehaviour BEHAVIOUR
DEFINED AS
    "This package contains the elementary mandatory attributes of a externalGsmCell.";
```

5.2.9   gsmRelationBasicPackage

```
gsmRelationBasicPackage PACKAGE
    BEHAVIOUR
      gsmRelationBasicPackageBehaviour;
    ATTRIBUTES
      gsmRelationId                             GET,
      "3GPP TS 32.644 Release 5": adjacentCell  GET-REPLACE;
REGISTERED AS {ts32-654Package 9};


gsmRelationBasicPackageBehaviour BEHAVIOUR
DEFINED AS
    "The 'GsmRelation' managed object contains radio network related parameters for the relation
     to the 'GsmCell' or 'ExternalGsmCell' managed object. Note: In handover relation terms, the
     cell containing the GSM Relation object is the source cell for the handover. The cell referred
     to in the GSM relation 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.";
```

5.2.10   gsmRelationOptionalPackage

```
gsmRelationOptionalPackage PACKAGE
    BEHAVIOUR
      gsmRelationOptionalPackageBehaviour;
    ATTRIBUTES
      "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": bsIdentityCode  GET-REPLACE,
      "3GPP TS 32.644 Release 5": lac                                     GET-REPLACE,
      "ETS 300 622: JUNE 1996 (GSM 12.20 VERSION 4.2.1)": bcchFrequency   GET-REPLACE;
REGISTERED AS {ts32-654Package 10};


gsmRelationOptionalPackageBehaviour BEHAVIOUR
DEFINED AS
    "This package contains the optional attributes of a gsmRelation.";
```

5.2.11 ExternalBssFunctionBasicPackage

```
externalBssFunctionBasicPackage PACKAGE
    BEHAVIOUR
        externalBssFunctionBasicPackageBehaviour;
    ATTRIBUTES
        externalBssFunctionId   GET;
REGISTERED AS {ts32-654Package 11};


externalBssFunctionBasicPackageBehaviour BEHAVIOUR
DEFINED AS
    "The Managed Object Class externalBssFunction represents external BSS functionality.";
```

5.3 Attributes

5.3.1 bssFunctionId

```
bssFunctionId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
        TS32-654TypeModule.GeneralObjectId;
    MATCHES FOR
        EQUALITY;
    BEHAVIOUR
        bssFunctionIdBehaviour;
REGISTERED AS {ts32-654Attribute 1};


bssFunctionIdBehaviour BEHAVIOUR
DEFINED AS
    "This attribute identifies a bssFunction object.";
```

5.3.2 btsSiteMgrId

```
btsSiteMgrId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
        TS32-654TypeModule.GeneralObjectId;
    MATCHES FOR
        EQUALITY;
    BEHAVIOUR
        btsSiteMgrIdBehaviour;
REGISTERED AS {ts32-654Attribute 2};


btsSiteMgrIdBehaviour BEHAVIOUR
DEFINED AS
    "This attribute identifies a btsSiteMgr object.";
```

5.3.3 longitude

```
longitude ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
        TS32-654TypeModule.Longitude;
    MATCHES FOR
        EQUALITY;
    BEHAVIOUR
        longitudeBehaviour;
REGISTERED AS {ts32-654Attribute 3};


longitudeBehaviour BEHAVIOUR
DEFINED AS
    "Used for geographical positioning of the sitemanager.";
```

5.3.4 latitude

```
latitude ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
        TS32-654TypeModule.Latitude;
    MATCHES FOR
        EQUALITY;
    BEHAVIOUR
        latitudeBehaviour;
REGISTERED AS {ts32-654Attribute 4};
```

```
latitudeBehaviour BEHAVIOUR
DEFINED AS
    "Used for geographical positioning of the sitemanager.";
```

5.3.5 gsmCellId

```
gsmCellId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
        TS32-654TypeModule.GeneralObjectId;
    MATCHES FOR
        EQUALITY;
    BEHAVIOUR
        gsmCellIdBehaviour;
REGISTERED AS {ts32-654Attribute 5};

gsmCellIdBehaviour BEHAVIOUR
DEFINED AS
    "Cell Identity (Ref GSM 03.03).";
```

5.3.6 racc

```
racc ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
        TS32-654TypeModule.Racc;
    MATCHES FOR
        EQUALITY;
    BEHAVIOUR
        raccBehaviour;
REGISTERED AS {ts32-654Attribute 7};

raccBehaviour BEHAVIOUR
DEFINED AS
    "Routing Area Colour Code, RACC.";
```

5.3.7 gsmRelationId

```
gsmRelationId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
        TS32-654TypeModule.GeneralObjectId;
    MATCHES FOR
        EQUALITY;
    BEHAVIOUR
        gsmRelationIdBehaviour;
REGISTERED AS {ts32-654Attribute 8};

gsmRelationIdBehaviour BEHAVIOUR
DEFINED AS
    "This attribute identifies a gsmRelation object.";
```

5.3.8 externalGsmCellId

```
externalGsmCellId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
        TS32-654TypeModule.GeneralObjectId;
    MATCHES FOR
        EQUALITY;
    BEHAVIOUR
        externalGsmCellIdBehaviour;
REGISTERED AS {ts32-654Attribute 9};

externalGsmCellIdBehaviour BEHAVIOUR
DEFINED AS
    "This attribute identifies a externalGsmCell object.";
```

5.3.9 externalBssFunctionId

```
externalBssFunctionId ATTRIBUTE
    WITH ATTRIBUTE SYNTAX
        TS32-654TypeModule.GeneralObjectId;
    MATCHES FOR
        EQUALITY;
```

```
    BEHAVIOUR
        externalBssFunctionIdBehaviour;
REGISTERED AS {ts32-654Attribute 10};

externalBssFunctionIdBehaviour BEHAVIOUR
DEFINED AS
    "This attribute identifies an externalBssFunction object.";
```

5.4 Name Binding

5.4.1 bssFunction - managedElement

```
bssFunction-managedElement NAME BINDING
    SUBORDINATE OBJECT CLASS
        bssFunction;
    NAMED BY SUPERIOR OBJECT CLASS
        "3GPP TS 32.624 Release 5": managedElement;
    WITH ATTRIBUTE
        bssFunctionId;
    BEHAVIOUR
        bssFunction-managedElementBehaviour;
    CREATE
        WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-654NameBinding 1};

bssFunction-managedElementBehaviour BEHAVIOUR
DEFINED AS
    "The name binding represents a relationship in which a managedElement contains
     and controls a bssFunction. When automatic instance naming is used, the choice
     of name bindings is left as a local matter.";
```

5.4.2 btsSiteMgr - bssFunction

```
btsSiteMgr-bssFunction NAME BINDING
    SUBORDINATE OBJECT CLASS
        btsSiteMgr;
    NAMED BY SUPERIOR OBJECT CLASS
        bssFunction;
    WITH ATTRIBUTE
        btsSiteMgrId;
    BEHAVIOUR
        btsSiteMgr-bssFunctionBehaviour;
    CREATE
        WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-654NameBinding 2};

btsSiteMgr-bssFunctionBehaviour BEHAVIOUR
DEFINED AS
    "The name binding represents a relationship in which a bssFunction contains
     and controls a btsSiteMgr. When automatic instance naming is used, the choice
     of name bindings is left as a local matter.";
```

5.4.3 gsmCell - btsSiteMgr

```
gsmCell-btsSiteMgr NAME BINDING
    SUBORDINATE OBJECT CLASS
        gsmCell;
    NAMED BY SUPERIOR OBJECT CLASS
        btsSiteMgr;
    WITH ATTRIBUTE
        gsmCellId;
    BEHAVIOUR
        gsmCell-btsSiteMgrBehaviour;
    CREATE
        WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-654NameBinding 3};
```

```
gsmCell-btsSiteMgrBehaviour BEHAVIOUR
DEFINED AS
    "The name binding represents a relationship in which a btsSiteMgr contains
     and controls a gsmCell. When automatic instance naming is used, the choice
     of name bindings is left as a local matter.";
```

5.4.4   gsmRelation - gsmCell

```
gsmRelation-gsmCell NAME BINDING
    SUBORDINATE OBJECT CLASS
        gsmRelation;
    NAMED BY SUPERIOR OBJECT CLASS
        gsmCell;
    WITH ATTRIBUTE
        gsmRelationId;
    BEHAVIOUR
        gsmRelation-gsmCellBehaviour;
    CREATE
        WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-654NameBinding 4};

gsmRelation-gsmCellBehaviour BEHAVIOUR
DEFINED AS
    "The name binding represents a relationship in which a gsmCell contains
     and controls a gsmRelation. When automatic instance naming is used, the choice
     of name bindings is left as a local matter.";
```

5.4.5   externalGsmCell - subNetwork

```
externalGsmCell-subNetwork NAME BINDING
    SUBORDINATE OBJECT CLASS
        externalGsmCell;
    NAMED BY SUPERIOR OBJECT CLASS
        "3GPP TS 32.624 Release 5": subNetwork;
    WITH ATTRIBUTE
        externalGsmCellId;
    BEHAVIOUR
        externalGsmCell-subNetworkBehaviour;
    CREATE
        WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-654NameBinding 5};

externalGsmCell-subNetworkBehaviour BEHAVIOUR
DEFINED AS
    "The name binding represents a relationship in which a subNetwork contains
     and controls an externalGsmCell. When automatic instance naming is used, the choice
     of name bindings is left as a local matter.";
```

5.4.6   externalBssFunction - subNetwork

```
externalBssFunction-subNetwork NAME BINDING
    SUBORDINATE OBJECT CLASS
        externalBssFunction;
    NAMED BY SUPERIOR OBJECT CLASS
        "3GPP TS 32.624 Release 5": subNetwork;
    WITH ATTRIBUTE
        externalBssFunctionId;
    BEHAVIOUR
        externalBssFunction-subNetworkBehaviour;
    CREATE
        WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
    DELETE
        ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-654NameBinding 6};

externalBssFunction-subNetworkBehaviour BEHAVIOUR
DEFINED AS
    "The name binding represents a relationship in which a subNetwork contains
     and controls an externalBssFunction. When automatic instance naming is used, the choice
```

```
of name bindings is left as a local matter.";
```

6 ASN.1 Definitions

```
TS32-654TypeModule {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-Operation-Maintenance(3) ts-32-654(654) informationModel(0) asn1Module(2) version1(1)}


DEFINITIONS IMPLICIT TAGS ::=
BEGIN

--EXPORTS everything

IMPORTS

GeneralObjectId
    FROM TS32-624TypeModule {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
    umts-Operation-Maintenance(3) ts32-624(624) informationModel(0) asn1Module(2) version1(1)}

Rac
    FROM TS32-644TypeModule {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
    umts-Operation-Maintenance(3) ts-32-644(644) informationModel(0) asn1Module(2) version1(1)};


-- 3GPP TS 32.654 related Object Identifiers

baseNodeUMTS            OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0)
                                               mobileDomain(0) umts-Operation-Maintenance(3)}

ts32-654               OBJECT IDENTIFIER ::= {baseNodeUMTS ts32-654(654)}
ts32-654InfoModel      OBJECT IDENTIFIER ::= {ts32-654 informationModel(0)}

ts32-654ObjectClass    OBJECT IDENTIFIER ::= {ts32-654InfoModel managedObjectClass(3)}
ts32-654Package        OBJECT IDENTIFIER ::= {ts32-654InfoModel package(4)}
ts32-654Parameter      OBJECT IDENTIFIER ::= {ts32-654InfoModel parameter(5)}
ts32-654NameBinding    OBJECT IDENTIFIER ::= {ts32-654InfoModel nameBinding(6)}
ts32-654Attribute      OBJECT IDENTIFIER ::= {ts32-654InfoModel attribute(7)}
ts32-654Action         OBJECT IDENTIFIER ::= {ts32-654InfoModel action(9)}
ts32-654Notification   OBJECT IDENTIFIER ::= {ts32-654InfoModel notification(10)}


-- Start of 3GPP SA5 own definitions

Longitude ::= INTEGER

Latitude ::= INTEGER

Racc ::= INTEGER

END -- of TS32-654TypeModule
```

Annex A (informative):
Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Jun 2001	S_12	SP-010283	--	--	Approved at TSG SA #12 and placed under Change Control	2.0.0	4.0.0
Sep 2001	S_13	SP-010478	001	--	Correction due to TS renumbering	4.0.0	4.1.0
Sep 2001	S_13	SP-010477	002	--	Addition of mcc and mnc in the object model of GERAN	4.0.0	4.1.0
Dec 2002	S_18	SP-020749	003	--	Alignment of the CMIP SS with the Rel-5 version of the IS in 32.652	4.1.0	5.0.0
Jun 2003	S_20	SP-030283	005	--	Removal of relationType	5.0.0	5.1.0
Jun 2003	S_20	SP-030286	006	--	Alignment of object class names to externalGsmCell - Alignment with 32.624	5.0.0	5.1.0
Sep 2003	S_21	SP-030418	007	--	Inclusion of ExternalBssFunction - Alignment with 32.652	5.1.0	5.2.0
Dec 2003	S_22	SP-030642	008	--	Add notifications to functional objects - Align with 32.652 (IS)	5.2.0	5.3.0

History

Document history		
V5.0.0	December 2002	Publication
V5.1.0	June 2003	Publication
V5.2.0	September 2003	Publication
V5.3.0	December 2003	Publication