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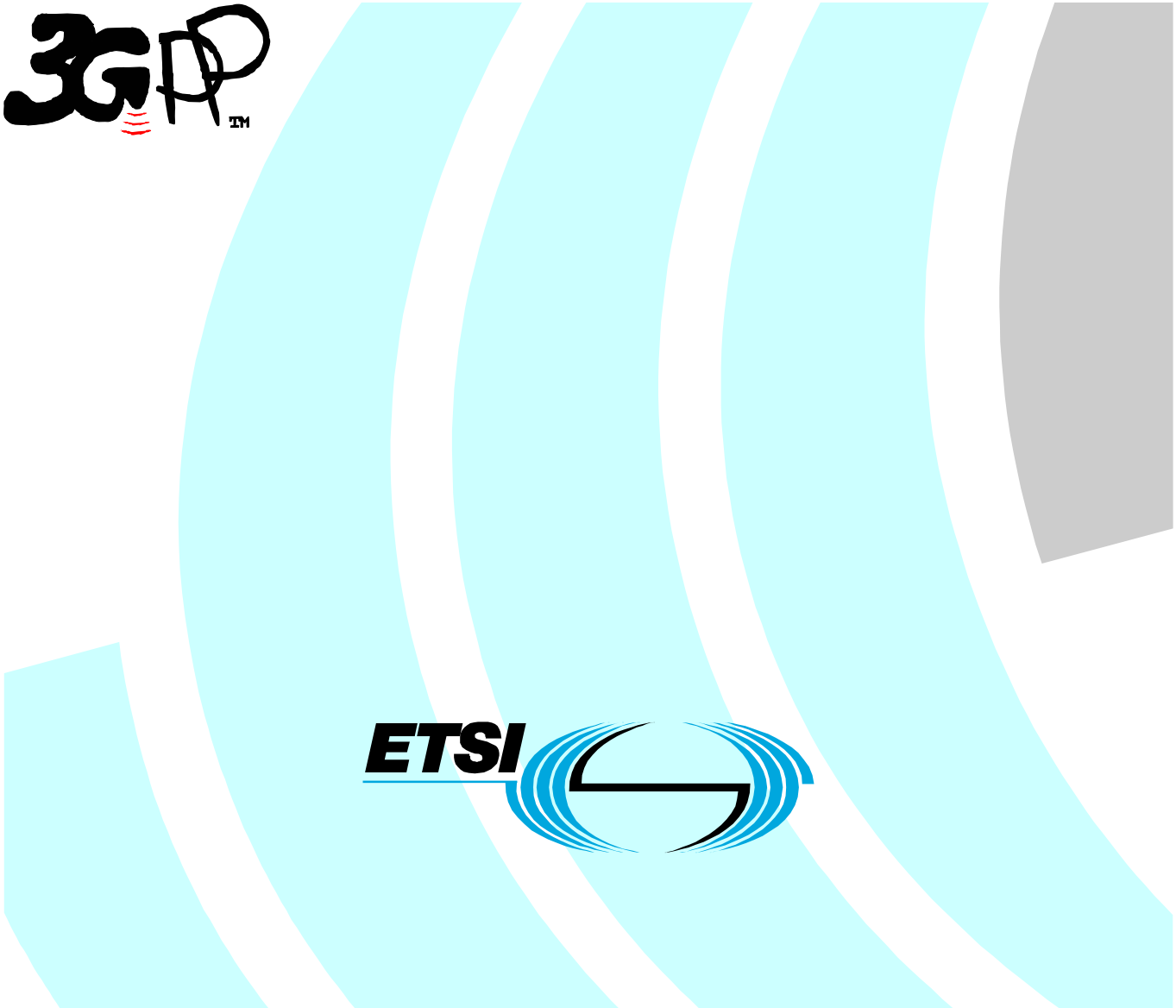
Technical Specification

Universal Mobile Telecommunications System (UMTS);
Telecommunication management;
Configuration Management (CM);
UTRAN network resources Integration Reference Point (IRP):
Common Management Information Protocol (CMIP)
solution set
(3GPP TS 32.644 version 5.1.0 Release 5)



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Foreword

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Contents

Foreword

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

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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 UTRAN Network Resource Integration Reference Point (IRP): Network Resource Model defined in 3GPP TS 32.642. 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 32.642 V5.0.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".

[4] 3GPP TS 32.642: "Telecommunication management; Configuration Management (CM); UTRAN 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".

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 and 3GPP TS 32.642 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
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 UTRAN network resource model is defined in 3GPP TS 32.642 for 3G networks. This document provides an implementation of this UTRAN network resource model by using CMIP technology.

4.2 Mapping

The semantic of the UTRAN Network Resource Model is defined in 3GPP TS 32.642. The specification of the information object classes defined there is independent of any implementation technology and protocol.
This subclause maps these technology and protocol independent definitions onto the equivalencies of the CMIP Solution Set of the UTRAN Network Resource IRP.

4.2.1 Mapping of Information Object Classes

Table 1 maps the information object classes defined in the UTRAN Network Resource Model onto the equivalent MOCs of the CMIP Solution Set.

Table 1: Mapping of IOCs

IS IOC	CMIP SS MOC
RncFunction	rncFunction
NodeBFunction	nodeBFunction
UtranCell	utranCell
IubLink	iubLink
UtranRelation	utranRelation
ExternalUtranCell	externalUtranCell

4.2.2 Mapping of Information Object Class Attributes

This chapter depicts the mapping of the attributes defined in 3GPP TS 32.642 [4] on the corresponding attributes of the CMIP Solution Set.

4.2.2.1 Attribute Mapping of the IOC *RncFunction*

Table 2: Attribute mapping of the IOC *RncFunction*

IS Attribute	CMIP SS Attribute	Qualifier
rncFunctionId	rncFunctionId	M
userLabel	userLabel (ITU-T M.3100 [9])	M
mcc	mcc	M
mnc	mnc	M
rncId	rncId	M

4.2.2.2 Attribute Mapping of the IOC *NodeBFunction*

Table 3: Attribute mapping of the IOC *NodeBFunction*

IS Attribute	CMIP SS Attribute	Qualifier
nodeBFunctionId	nodeBFunctionId	M
userLabel	userLabel (ITU-T M.3100 [9])	M
nodeBFunction-IubLink	NodeBFunction2iubLink	M

4.2.2.3 Attribute Mapping of the IOC *UtranCell*

Table 4: Attribute mapping of the IOC *UtranCell*

IS Attribute	CMIP SS Attribute	Qualifier
utranCellId	utranCellId	M
userLabel	userLabel (ITU-T M.3100 [9])	M
cId	cId	M
localCellId	localCellId	M
uarfcnDl	uarfcnDl	M
uarfcnUl	uarfcnUl	M
primaryScramblingCode	primaryScramblingCode	M
primaryCpichPower	primaryCpichPower	M
maximumTransmissionPower	maximumTransmissionPower	M
primarySchPower	primarySchPower	M
secondarySchPower	secondarySchPower	M
bchPower	bchPower	M
lac	lac	M
rac	rac	M
sac	sac	M
ura	ura	M
utranCell-IubLink	utranCell2iubLink	M
operationalState	operationalState	O

4.2.2.4 Attribute Mapping of the IOC *IubLink*

Table 5: Attribute mapping of the IOC *IubLink*

IS Attribute	CMIP SS Attribute	Qualifier
iubLinkId	iubLinkId	M
userLabel	userLabel (ITU-T M.3100 [9])	M
iubLink-UtranCell	iubLink2utranCell	M
iubLink-NodeBFunction	iubLink2nodeBFunction	M

4.2.2.5 Attribute Mapping of the IOC *UtranRelation*

Table 6: Attribute mapping of the IOC *UtranRelation*

IS Attribute	CMIP SS Attribute	Qualifier
utranRelationId	utranRelationId	M
adjacentCell	adjacentCell	M
uarfcnUl	uarfcnUl	O
uarfcnDl	uarfcnDl	O
primaryScramblingCode	primaryScramblingCode	O
primaryCpichPower	primaryCpichPower	O
lac	lac	O

4.2.2.6 Attribute Mapping of the IOC *ExternalUtranCell*

Table 7: Attribute mapping of the IOC *ExternalUtranCell*

IS Attribute	CMIP SS Attribute	Qualifier
externalUtranCellId	externalUtranCellId	M
userLabel	userLabel	M
cId	cId	M
mcc	mcc	M
mnc	mnc	M
rncId	rncId	M
uarfcnUl	uarfcnUl	M
uarfcnDl	uarfcnDl	M
primaryScramblingCode	primaryScramblingCode	M
primaryCpichPower	primaryCpichPower	M
lac	lac	M
rac	rac	M

5 GDMO Definitions

5.1 Managed Object Classes

5.1.1 rncFunction

rncFunction **MANAGED OBJECT CLASS**
DERIVED FROM
"3GPP TS 32.624 Release 5": managedFunction;
CHARACTERIZED BY
rncFunctionBasicPackage,
rncFunctionHandoverPackage;
REGISTERED AS {ts32-644ObjectClass 1};

5.1.2 utranCell

utranCell **MANAGED OBJECT CLASS**
DERIVED FROM
"3GPP TS 32.624 Release 5": managedFunction;
CHARACTERIZED BY
utranCellBasicPackage,
utranCellHandoverPackage,
utranCellAssociationPackage;
CONDITIONAL PACKAGES
"3GPP TS 32.674 Release 5": operationalStateAttributePackage **PRESENT IF**
"Instances of this MOC support operationalState attribute.";
REGISTERED AS {ts32-644ObjectClass 2};

5.1.3 utranRelation

utranRelation **MANAGED OBJECT CLASS**
DERIVED FROM
"Recommendation X.721: 1992":top;
CHARACTERIZED BY
utranRelationBasicPackage,
utranRelationAssociationPackage;
CONDITIONAL PACKAGES
"Recommendation M.3100: 1995": createDeleteNotificationsPackage **PRESENT IF**
"The objectCreation and the objectDeletion defined in Recommendation X.721 are supported by an
instance of this class.",
"Recommendation M.3100: 1995": attributeValueChangeNotificationPackage **PRESENT IF**
"The attributeValueChange notifications defined in Recommendation X.721 are supported by an instance of
this class.";
REGISTERED AS {ts32-644ObjectClass 3};

5.1.4 externalUtranCell

externalUtranCell **MANAGED OBJECT CLASS**
DERIVED FROM
"3GPP TS 32.624 Release 5": managedFunction;
CHARACTERIZED BY
externalUtranCellPackage;
REGISTERED AS {ts32-644ObjectClass 4};

5.1.5 iubLink

iubLink **MANAGED OBJECT CLASS**
DERIVED FROM

```
                    "3GPP TS 32.624 Release 5": managedFunction;
            CHARACTERIZED BY
                    iubLinkBasicPackage,
                    iubLinkAssociationPackage;
REGISTERED AS {ts32-644ObjectClass 5};
```

5.1.6 nodeBFunction

```
nodeBFunction MANAGED OBJECT CLASS
            DERIVED FROM
                    "3GPP TS 32.624 Release 5": managedFunction;
            CHARACTERIZED BY
                    nodeBFunctionBasicPackage,
                    nodeBFunctionAssociationPackage;
REGISTERED AS {ts32-644ObjectClass 6};
```

5.2 Packages

5.2.1 rncFunctionHandoverPackage

```
rncFunctionHandoverPackage PACKAGE
            BEHAVIOUR
                    rncFunctionHandoverPackageBehaviour;
            ATTRIBUTES
                    mcc     GET-REPLACE,
                    mnc     GET-REPLACE,
                    rncId   GET-REPLACE;
REGISTERED AS {ts32-644Package 1};

rncFunctionHandoverPackageBehaviour BEHAVIOUR
            DEFINED AS
        "This package contains all new attributes defined for UTRAN handover management. These attributes are
        introduced in R4.";
```

5.2.2 utranCellHandoverPackage

```
utranCellHandoverPackage PACKAGE
            BEHAVIOUR
                    utranCellHandoverPackageBehaviour;
            ATTRIBUTES
                    cId                         GET-REPLACE,
                    localCellId                 GET-REPLACE,
                    uarfcnUl                    GET-REPLACE,
                    uarfcnDl                    GET-REPLACE,
                    primaryScramblingCode       GET-REPLACE,
                    primaryCpichPower           GET-REPLACE,
                    maximumTransmissionPower    GET-REPLACE,
                    primarySchPower             GET-REPLACE,
                    secondarySchPower           GET-REPLACE,
                    bchPower                    GET-REPLACE,
                    lac                         GET-REPLACE,
                    rac                         GET-REPLACE,
                    sac                         GET-REPLACE,
                    ura                         GET-REPLACE;
REGISTERED AS {ts32-644Package 2};

utranCellHandoverPackageBehaviour BEHAVIOUR
            DEFINED AS
        "This package contains all new attributes defined for UTRAN handover management. These attributes are
        introduced in R4.";
```

5.2.3 utranRelationBasicPackage

utranRelationBasicPackage **PACKAGE**
BEHAVIOUR
utranRelationBasicPackageBehaviour;
ATTRIBUTES
utranRelationId GET,
uarfcnUl GET,
uarfcnDl GET,
primaryScramblingCode GET,
primaryCpichPower GET,
lac GET;
REGISTERED AS {ts32-644Package 3};

utranRelationBasicPackageBehaviour **BEHAVIOUR**
DEFINED AS
"The 'UtranRelation' managed object contains radio network related parameters for the relation to the 'UtranCell' or 'ExternalUtranCell' managed object. Note: In handover relation terms, the cell containing the UTRAN Relation object is the source cell for the handover. The cell referred to in the UTRAN 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.";

5.2.4 utranRelationAssociationPackage

utranRelationAssociationPackage **PACKAGE**
BEHAVIOUR
utranRelationAssociationPackageBehaviour;
ATTRIBUTES
adjacentCell GET-REPLACE;
REGISTERED AS {ts32-644Package 4};

utranRelationAssociationPackageBehaviour **BEHAVIOUR**
DEFINED AS
"This package contains all attributes implementing associations related to an utranRelation";

5.2.5 externalUtranCellPackage

externalUtranCellPackage **PACKAGE**
BEHAVIOUR
externalUtranCellPackageBehaviour;
ATTRIBUTES
externalUtranCellId GET,
cId GET-REPLACE,
mcc GET-REPLACE,
mnc GET-REPLACE,
rncId GET-REPLACE,
uarfcnUl GET-REPLACE,
uarfcnDl GET-REPLACE,
primaryScramblingCode GET-REPLACE,
primaryCpichPower GET-REPLACE,
lac GET-REPLACE,
rac GET-REPLACE;
REGISTERED AS {ts32-644Package 5};

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

5.2.6 rncFunctionBasicPackage

```
rncFunctionBasicPackage PACKAGE
        BEHAVIOUR
                rncFunctionBasicPackageBehaviour;
        ATTRIBUTES
                rncFunctionId           GET;
REGISTERED AS {ts32-644Package 6};

rncFunctionBasicPackageBehaviour BEHAVIOUR
        DEFINED AS
    "The MOC rncFunction represents UMTS RNC function.";
```

5.2.7 utranCellBasicPackage

```
utranCellBasicPackage PACKAGE
        BEHAVIOUR
                utranCellBasicPackageBehaviour;
        ATTRIBUTES
                utranCellId GET;
REGISTERED AS {ts32-644Package 7};

utranCellBasicPackageBehaviour BEHAVIOUR
        DEFINED AS
    "This managed object class represents the radio cell controlled by a RNC.";
```

5.2.8 utranCellAssociationPackage

```
utranCellAssociationPackage PACKAGE
        BEHAVIOUR
                utranCellAssociationPackageBehaviour;
        ATTRIBUTES
                utranCell2iubLink       GET;
REGISTERED AS {ts32-644Package 8};

utranCellAssociationPackageBehaviour BEHAVIOUR
        DEFINED AS
    "This package contains the pointer attributes that implement associations related to utranCell.";
```

5.2.9 iubLinkBasicPackage

```
iubLinkBasicPackage PACKAGE
        BEHAVIOUR
                iubLinkBasicPackageBehaviour;
        ATTRIBUTES
                iubLinkId GET;
REGISTERED AS {ts32-644Package 9};

iubLinkBasicPackageBehaviour BEHAVIOUR
        DEFINED AS
    "This managed object class models the Iub Link between a Node-B and a RNC.";
```

5.2.10 iubLinkAssociation

```
iubLinkAssociationPackage PACKAGE
        BEHAVIOUR
                iubLinkAssociationPackageBehaviour;
        ATTRIBUTES
                iubLink2nodeBFunction   GET,
                iubLink2utranCell       GET;
```

REGISTERED AS {ts32-644Package 10};

iubLinkAssociationPackageBehaviour **BEHAVIOUR**
DEFINED AS
"The attribute 'iubLink2NodeBFunction' points to the nodeBFunction instance which this iubLink instance connects to. The attribute ‘iubLink2utranCell’ points to a list of utranCell instances which attach to the nodeBFunction this iubLink connects to.";

5.2.11 nodeBFunctionBasicPackage

nodeBFunctionBasicPackage **PACKAGE**
BEHAVIOUR
nodeBFunctionBasicPackageBehaviour;
ATTRIBUTES
nodeBFunctionId GET;
REGISTERED AS {ts32-644Package 11};

nodeBFunctionBasicPackageBehaviour **BEHAVIOUR**
DEFINED AS
"This managed object class represents the NodeB functionality.";

5.2.12 nodeBFunctionAssociationPackage

nodeBFunctionAssociationPackage **PACKAGE**
BEHAVIOUR
nodeBFunctionAssociationPackageBehaviour;
ATTRIBUTES
nodeB2iubLink GET;
REGISTERED AS {ts32-644Package 12};

nodeBFunctionAssociationPackageBehaviour **BEHAVIOUR**
DEFINED AS
"The attribute 'nodeB2iubLink' points to the iubLink instance which connects to this nodeBFunction instance directly.";

5.3 Attributes

5.3.1 mcc

mcc **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.MobileCountryCode;
MATCHES FOR EQUALITY;
BEHAVIOUR
mccBehaviour;
REGISTERED AS {ts32-644Attribute 1};

mccBehaviour **BEHAVIOUR**
DEFINED AS
"Mobile Country Code, MCC. It is a part of the PLMN Id (Ref. 3 GPP TS 23.003).”;

5.3.2 mnc

mnc **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.MobileNetworkCode;
MATCHES FOR EQUALITY;
BEHAVIOUR

```
                    mncBehaviour;
REGISTERED AS {ts32-644Attribute 2};

mncBehaviour BEHAVIOUR
        DEFINED AS
    "Mobile Network Code, MNC. It is a part of the PLMN Id (Ref. 3 GPP TS 23.003).";
```

5.3.3 rncId

```
rncId ATTRIBUTE
        WITH ATTRIBUTE SYNTAX
            TS32-644TypeModule.GeneralObjectId;
        MATCHES FOR EQUALITY;
        BEHAVIOUR
            rncIdBehaviour;
REGISTERED AS {ts32-644Attribute 3};

rncIdBehaviour BEHAVIOUR
        DEFINED AS
    "Unique RNC ID (Ref. 3 GPP TS 23.003).";
```

5.3.4 cId

```
cId ATTRIBUTE
        WITH ATTRIBUTE SYNTAX
            TS32-644TypeModule.GeneralObjectId;
        MATCHES FOR EQUALITY;
        BEHAVIOUR
            cIdBehaviour;
REGISTERED AS {ts32-644Attribute 4};

cIdBehaviour BEHAVIOUR
        DEFINED AS
    "cId is the identifier of a cell in one RNC (Ref. 3 GPP TS 25.401).";
```

5.3.5 localCellId

```
localCellId ATTRIBUTE
        WITH ATTRIBUTE SYNTAX
            TS32-644TypeModule.GeneralObjectId;
        MATCHES FOR EQUALITY;
        BEHAVIOUR
            localCellIdBehaviour;
REGISTERED AS {ts32-644Attribute 5};

localCellIdBehaviour BEHAVIOUR
        DEFINED AS
    "Local Cell id is used to uniquely identify the set of resources defined in a Node B to support a cell (as defined
    by a Cid Ref. 3 GPP TS 25.401). It must be unique in Node B at a minimum, but may be unique in UTRAN. It
    can be used to tie the cell in the RNC to a specific set of resources in the Node B.";
```

5.3.6 uarfcnUl

```
uarfcnUl ATTRIBUTE
        WITH ATTRIBUTE SYNTAX
            TS32-644TypeModule.UarfcnUl;
        MATCHES FOR EQUALITY;
        BEHAVIOUR
            uarfcnUlBehaviour;
REGISTERED AS {ts32-644Attribute 6};
```

uarfcnUlBehaviour **BEHAVIOUR**
DEFINED AS
"The UL UTRA absolute Radio Frequency Channel number, UARFCN (Ref. 3 GPP TS 25.433).";

5.3.7 uarfcnDl

uarfcnDl **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.UarfcnDl;
MATCHES FOR EQUALITY;
BEHAVIOUR
uarfcnDlBehaviour;
REGISTERED AS {ts32-644Attribute 7};

uarfcnDlBehaviour **BEHAVIOUR**
DEFINED AS
"The DL UTRA absolute Radio Frequency Channel number, UARFCN (Ref. 3 GPP TS 25.433).";

5.3.8 primaryScramblingCode

primaryScramblingCode **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.PrimaryScramblingCode;
MATCHES FOR EQUALITY;
BEHAVIOUR
primaryScramblingCodeBehaviour;
REGISTERED AS {ts32-644Attribute 8};

primaryScramblingCodeBehaviour **BEHAVIOUR**
DEFINED AS
"The primary DL scrambling code used by the cell (Ref. 3 GPP TS 25.433).";

5.3.9 primaryCpichPower

primaryCpichPower **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.PrimaryCpichPower;
MATCHES FOR EQUALITY;
BEHAVIOUR
primaryCpichPowerBehaviour;
REGISTERED AS {ts32-644Attribute 9};

primaryCpichPowerBehaviour **BEHAVIOUR**
DEFINED AS
"The power of the primary CPICH channel in the cell (Ref. 3 GPP TS 25.433).";

5.3.10 maximumTransmissionPower

maximumTransmissionPower **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.MaximumTransmissionPower;
MATCHES FOR EQUALITY;
BEHAVIOUR
maximumTransmissionPowerBehaviour;
REGISTERED AS {ts32-644Attribute 10};

maximumTransmissionPowerBehaviour **BEHAVIOUR**
DEFINED AS
"The maximum transmission power of a cell, DL Power (Ref. 3 GPP TS 25.433).";

5.3.11 primarySchPower

primarySchPower **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.PrimarySchPower;
MATCHES FOR EQUALITY;
BEHAVIOUR
primarySchPowerBehaviour;
REGISTERED AS {ts32-644Attribute 11};

primarySchPowerBehaviour **BEHAVIOUR**
DEFINED AS
"The power of the primary synchronisation channel in the cell, DL Power (Ref. 3 GPP TS 25.433).";

5.3.12 secondarySchPower

secondarySchPower **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.SecondarySchPower;
MATCHES FOR EQUALITY;
BEHAVIOUR
secondarySchPowerBehaviour;
REGISTERED AS {ts32-644Attribute 12};

secondarySchPowerBehaviour **BEHAVIOUR**
DEFINED AS
"The power of the secondary synchronisation channel in the cell, DL Power (Ref. 3 GPP TS 25.433).";

5.3.13 bchPower

bchPower **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.BchPower;
MATCHES FOR EQUALITY;
BEHAVIOUR
bchPowerBehaviour;
REGISTERED AS {ts32-644Attribute 13};

bchPowerBehaviour **BEHAVIOUR**
DEFINED AS
"The power of the broadcast channel in the cell (Ref. 3 GPP TS 25.433).";

5.3.14 lac

lac **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.LocationAreaCode;
MATCHES FOR EQUALITY;
BEHAVIOUR
lacBehaviour;
REGISTERED AS {ts32-644Attribute 14};

lacBehaviour **BEHAVIOUR**
DEFINED AS
"Location Area Code, LAC (Ref. 3 GPP TS 23.003)";

5.3.15 rac

rac **ATTRIBUTE**

```
                WITH ATTRIBUTE SYNTAX
                        TS32-644TypeModule.Rac;
                MATCHES FOR EQUALITY;
                BEHAVIOUR
                        racBehaviour;
REGISTERED AS {ts32-644Attribute 15};

racBehaviour BEHAVIOUR
                DEFINED AS
        "Routing Area Code, RAC (Ref. 3 GPP TS 23.003)";
```

5.3.16 sac

```
sac ATTRIBUTE
                WITH ATTRIBUTE SYNTAX
                        TS32-644TypeModule.Sac;
                MATCHES FOR EQUALITY;
                BEHAVIOUR
                        sacBehaviour;
REGISTERED AS {ts32-644Attribute 16};

sacBehaviour BEHAVIOUR
                DEFINED AS
        "Service Area Code, RAC (Ref. 3 GPP TS 23.003)";
```

5.3.17 ura

```
ura ATTRIBUTE
                WITH ATTRIBUTE SYNTAX
                        TS32-644TypeModule.Ura;
                MATCHES FOR EQUALITY;
                BEHAVIOUR
                        uraBehaviour;
REGISTERED AS {ts32-644Attribute 17};

uraBehaviour BEHAVIOUR
                DEFINED AS
        "UTRAN Registration Area, URA (Ref. 3 GPP TS 25.423)";
```

5.3.18 utranRelationId

```
utranRelationId ATTRIBUTE
                WITH ATTRIBUTE SYNTAX
                        TS32-644TypeModule.GeneralObjectId;
                MATCHES FOR EQUALITY;
                BEHAVIOUR
                        utranRelationIdBehaviour;
REGISTERED AS {ts32-644Attribute 18};

utranRelationIdBehaviour BEHAVIOUR
                DEFINED AS
        "This attribute identifies an utranRelation object.";
```

5.3.19 relationType

Void.

5.3.20 adjacentCell

```
adjacentCell ATTRIBUTE
```

```
                WITH ATTRIBUTE SYNTAX
                        TS32-644TypeModule.GeneralObjectPointer;
                MATCHES FOR EQUALITY;
                BEHAVIOUR
                        adjacentCellBehaviour;
REGISTERED AS {ts32-644Attribute 20};

adjacentCellBehaviour BEHAVIOUR
                DEFINED AS
        "Pointer to UTRAN cell or external UTRAN cell. Distinguished name of the corresponding object.";
```

5.3.21 externalUtranCellId

```
externalUtranCellId ATTRIBUTE
                WITH ATTRIBUTE SYNTAX
                        TS32-644TypeModule.GeneralObjectId;
                MATCHES FOR EQUALITY;
                BEHAVIOUR
                        adjacentCellBehaviour;
REGISTERED AS {ts32-644Attribute 21};

externalUtranCellIdBehaviour BEHAVIOUR
                DEFINED AS
        "This attribute identifies an externalUtranCell object.";
```

5.3.22 rncFunctionId

```
rncFunctionId ATTRIBUTE
                WITH ATTRIBUTE SYNTAX
                        TS32-644TypeModule.GeneralObjectId;
                MATCHES FOR EQUALITY;
                BEHAVIOUR
                        rncFunctionIdBehaviour;
REGISTERED AS {ts32-644Attribute 22};

rncFunctionIdBehaviour BEHAVIOUR
                DEFINED AS
        "This attribute names an instance of the 'rncFunction' object class.";
```

5.3.23 utranCellId

```
utranCellId ATTRIBUTE
                WITH ATTRIBUTE SYNTAX
                        TS32-644TypeModule.GeneralObjectId;
                MATCHES FOR EQUALITY;
                BEHAVIOUR
                        utranCellIdBehaviour;
REGISTERED AS {ts32-644Attribute 23};

utranCellIdBehaviour BEHAVIOUR
                DEFINED AS
        "This attribute names an instance of the 'utranCell' object class.";
```

5.3.24 utranCell2iubLink

```
utranCell2iubLink ATTRIBUTE
                WITH ATTRIBUTE SYNTAX
                        TS32-644TypeModule.GeneralObjectPointer;
                MATCHES FOR EQUALITY;
                BEHAVIOUR
                        utranCell2iubLinkBehaviour;
```

REGISTERED AS {ts32-644Attribute 24};

utranCell2iubLinkBehaviour **BEHAVIOUR**
DEFINED AS
"This attribute points to the iubLink instance connecting to this utranCell. ";

5.3.25 iubLinkId

iubLinkId **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX TS32-644TypeModule.GeneralObjectId;
MATCHES FOR EQUALITY;
BEHAVIOUR
iubLinkIdBehaviour;
REGISTERED AS {ts32-644Attribute 25};

iubLinkIdBehaviour **BEHAVIOUR**
DEFINED AS
"This attribute names an instance of the 'iubLink' object class.";

5.3.26 iubLink2nodeBFunction

iubLink2nodeBFunction **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.GeneralObjectPointer;
MATCHES FOR EQUALITY;
BEHAVIOUR
iubLink2nodeBFunctionBehaviour;
REGISTERED AS {ts32-644Attribute 26};

iubLink2nodeBFunctionBehaviour **BEHAVIOUR**
DEFINED AS
"This attribute points to the nodeBFunction instance which this iubLink instance connects directly to.";

5.3.27 iubLink2utranCell

iubLink2utranCell **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.GeneralObjectPointerList;
MATCHES FOR EQUALITY;
BEHAVIOUR
iubLink2utranCellBehaviour;
REGISTERED AS {ts32-644Attribute 27};

iubLink2utranCellBehaviour **BEHAVIOUR**
DEFINED AS
"This attribute points from an iubLink instance to a list of utranCell instance";

5.3.28 nodeBFunctionId

nodeBFunctionId **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.GeneralObjectId;
MATCHES FOR EQUALITY;
BEHAVIOUR
nodeBFunctionIdBehaviour;
REGISTERED AS {ts32-644Attribute 28};

nodeBFunctionIdBehaviour **BEHAVIOUR**
DEFINED AS
"This attribute names an instance of the 'nodeBFunction' object class.";

5.3.29 nodeBFunction2iubLink

nodeBFunction2iubLink **ATTRIBUTE**
WITH ATTRIBUTE SYNTAX
TS32-644TypeModule.GeneralObjectPointer;
MATCHES FOR EQUALITY;
BEHAVIOUR
nodeBFunction2iubLinkBehaviour;
REGISTERED AS {ts32-644Attribute 29};

nodeBFunction2iubLinkBehaviour **BEHAVIOUR**
DEFINED AS
"This attribute points to the IubLink instance which connects to the related nodeBFunction instance directly.";

5.4 Name Binding

5.4.1 rncFunction - managedElement

rncFunction-managedElement **NAME BINDING**
SUBORDINATE OBJECT CLASS
rncFunction;
NAMED BY SUPERIOR OBJECT CLASS
“3GPP TS 32.624 Release 5”: managedElement;
WITH ATTRIBUTE
rncFunctionId;
BEHAVIOUR
rncFunction-managedElementBehaviour;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-644NameBinding 1};

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

5.4.2 nodeBFunction - managedElement

nodeBFunction-managedElement **NAME BINDING**
SUBORDINATE OBJECT CLASS
nodeBFunction;
NAMED BY SUPERIOR OBJECT CLASS
“3GPP TS 32.624 Release 5”: managedElement;
WITH ATTRIBUTE
nodeBFunctionId;
BEHAVIOUR
nodeBFunction-managedElementBehaviour;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-644NameBinding 2};

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

5.4.3 utranCell - rncFunction

utranCell-rncFunction **NAME BINDING**
SUBORDINATE OBJECT CLASS

utranCell;
NAMED BY SUPERIOR OBJECT CLASS
rncFunction;
WITH ATTRIBUTE
utranCellId;
BEHAVIOUR
utranCell-rncFunctionBehaviour;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-644NameBinding 3};

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

5.4.4 utranRelation - utranCell

utranRelation-utranCell **NAME BINDING**
SUBORDINATE OBJECT CLASS
utranRelation;
NAMED BY SUPERIOR OBJECT CLASS
utranCell;
WITH ATTRIBUTE
utranRelationId;
BEHAVIOUR
utranRelation-utranCellBehaviour;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-644NameBinding 4};

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

5.4.5 externalUtranCell - subNetwork

externalUtranCell-subNetwork **NAME BINDING**
SUBORDINATE OBJECT CLASS
externalUtranCell;
NAMED BY SUPERIOR OBJECT CLASS
“3GPP TS 32.624 Release 5”: subNetwork;
WITH ATTRIBUTE
externalUtranCellId;
BEHAVIOUR
externalUtranCell-subNetworkBehaviour;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-644NameBinding 5};

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

5.4.6

5.4.10 iubLink - rncFunction

iubLink-rncFunction **NAME BINDING**
SUBORDINATE OBJECT CLASS

iubLink;
NAMED BY SUPERIOR OBJECT CLASS
rncFunction;
WITH ATTRIBUTE
iubLinkId;
BEHAVIOUR
iubLink-rncFunctionBehaviour;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-644NameBinding 10};

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

5.4.10 gsmRelation - utranCell

gsmRelation-utranCell **NAME BINDING**
SUBORDINATE OBJECT CLASS
"3GPP TS 32.654 Release 5": gsmRelation;
NAMED BY SUPERIOR OBJECT CLASS
utranCell;
WITH ATTRIBUTE
"3GPP TS 32.654 Release 5": gsmRelationId;
BEHAVIOUR
gsmRelation-utranCellBehaviour;
CREATE WITH-REFERENCE-OBJECT, WITH-AUTOMATIC-INSTANCE-NAMING;
DELETE ONLY-IF-NO-CONTAINED-OBJECTS;
REGISTERED AS {ts32-644NameBinding 11};

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

6 ASN.1 Definitions

```
TS32-644TypeModule {ccitt (0) identified-organization (4) etsi (0) mobileDomain (0) umts-Operation-
Maintenance (3) ts32-644 (644) informationModel (0) asn1Module (2) version1 (1)}


DEFINITIONS IMPLICIT TAGS ::=
BEGIN

--EXPORTS everything

IMPORTS

GeneralObjectId, GeneralObjectPointer, GeneralObjectPointerList
    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)}

MobileCountryCode, MobileNetworkCode, LocationAreaCode
    FROM GSM1220TypeModule {ccitt (0) identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Operation-Maintenance (3) gsm-12-20 (20) informationModel (0) asn1Module (2)
    asn1TypeModule (0)};


-- 3GPP TS 32.644 related Object Identifiers

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

ts32-644                OBJECT IDENTIFIER ::= { baseNodeUMTS ts32-644                   (644)}
ts32-644InfoModel       OBJECT IDENTIFIER ::= { ts32-644 informationModel               (  0)}

ts32-644ObjectClass     OBJECT IDENTIFIER ::= { ts32-644InfoModel managedObjectClass    (  3)}
ts32-644Package         OBJECT IDENTIFIER ::= { ts32-644InfoModel package               (  4)}
ts32-644Parameter       OBJECT IDENTIFIER ::= { ts32-644InfoModel parameter             (  5)}
ts32-644NameBinding     OBJECT IDENTIFIER ::= { ts32-644InfoModel nameBinding           (  6)}
ts32-644Attribute       OBJECT IDENTIFIER ::= { ts32-644InfoModel attribute             (  7)}
ts32-644Action          OBJECT IDENTIFIER ::= { ts32-644InfoModel action                (  9)}
ts32-644Notification    OBJECT IDENTIFIER ::= { ts32-644InfoModel notification          ( 10)}


-- Start of 3GPP SA5 own definitions

UarfcnUl ::= INTEGER

UarfcnDl ::= INTEGER

PrimaryScramblingCode ::= INTEGER

PrimaryCpichPower ::= INTEGER

MaximumTransmissionPower ::= INTEGER

PrimarySchPower ::= INTEGER

SecondarySchPower ::= INTEGER

BchPower ::= INTEGER

Lac ::= INTEGER

Rac ::= INTEGER

Sac ::= INTEGER

Ura ::= INTEGER


END -- of TS32-644TypeModule
```

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 2002	--	--	--	--	Cosmetics/Styles	4.1.0	4.1.1
Dec 2002	S_18	SP-020749	007	--	Alignment of the CMIP SS with the Rel-5 version of the IS in 32.642	4.1.1	5.0.0
Jun 2003	S_20	SP-030283	003	--	Removal of relationType	5.0.0	5.1.0

History

Document history		
V5.0.0	December 2002	Publication
V5.1.0	June 2003	Publication